1

SEQUENCE LISTING

<110>

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    Maher, Kaija
    Kilpatrick, David R.
    Pallansch, Mark A.

<120> TYPING OF HUMAN NON-POLIO ENTEROVIRUSES

<130> 14114.0353U2

<150> PCT/US00/07828
<151> 2000-3-24

<150> 60/127,464
<151> 1999-3-31

<160> 86

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<213> Artificial Sequence

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<212> DNA
<213> Artificial Sequence

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acngcngyng aracnggnca   20

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20
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<400> 22
cnccnggngg nayrwacat                                                    19


<210> 23
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<212> DNA
<213> Enterovirus

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<222> (0)...(0)
<223> CA1, strain Tomkins


<400> 23
ggattgggcg attctattga ggctgccatt gacagcatca cacaaaatgc actaaccact      60
gtacaaaata caacacaatc aggacctact cattcaaaag aagttccagc attaacagca     120
gtggaaacag gtgctactag tcaagtagaa ccaggtgact tgattgaaac cagacatgtt     180
ataaacatga dacaaagatc tgaagcatct atcgaatctt tctttggccg atccgcatgt     240
gttgcgatac ttggtttgtc aaacgccaaa ccaactgaca caaacaccaa acaattgttc     300
aaaacatgga gaatatcata tttagaaact caccaactca gaagaaaact tgagttcttt     360
acgtactcaa ggtttgattt ggaaatgacc atagtaatta cagagagggt tttcaatgca     420
gtcaatgtcc cattgcgcaa ttatgtgtac caaataatgt acgttccccc aggtgctcca     480
gaaccacaat catgggatga ttacacgtgg caatcttcta ccaacccatc aatattctac     540
accactggaa atgctcctcc cagagtgtca attccatttg ttggaatagg gtctgcatat     600
tcacactttt atgatggttt ctcacagatt cctcttgact caatcagtgc tggagcaagt     660
aataagtatg gttacacttc aatcaatgac tttggtaccc tggcaattag aatagtaaat     720
gaatatgacc cagtgcaagt ggatgcaaag gcccgagtgt atattaaacc caaacatgtt     780
cgcatgtggt gccccagacc accacgggcc atgccttaca agaatagcac agtggatttc     840
gacccatcag caactgtaat gacccaagtc gcagacatca ggacgtat                  888


<210> 24
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<212> DNA
<213> Enterovirus

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<222> (0)...(0)
<223> CA3, strain Olson


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tctccaactc ataatacaac ggcaggcaac accaccgtta gcgagcacag catcggtacc     120
ggttcagtgc ctgcgttgca agctgctgag actggggctt cgtctaacac cacagatgag     180
agtatgatag aaacacggtg tgttgtcaat aggaatggag tgattgagac tagcatcaac     240
catttcttct cccgagcggg gcttgtggga gtgctgaaca tacttgatgg aggcacctca     300
aaaggctttg aagtttggga tatagacatc atgggctttg ttcagcttcg cagaaagcta     360
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```
gagatgttca cctacatgcg gttcaacgct gaattcacct ttgtcgcgac tttgagtgac      420
ggaacaactc cccatataat gttgcaatac atgtatgtgc cccctggagc tcccaaacct      480
caggaaagag attcattcca atggcagact gcaaccaacc catccgtgtt tgcgaaaatg      540
agtgaccctc ctccgcaagt ttcagtacct ttcatgtctc ctgctagcgc ctaccagtgg      600
ttttatgatg ggtacccaac atttgatgat agaccacaga cctctaatcg tccctacgga      660
caatgcccca ataacatgtt gggcacattc gcggtgcgca ttgttagcaa gacgcctgcg      720
gagagagact tgcgcgtccg tgtttacatg aaactgaagc atgtgcgagc atgggtaccg      780
cgacccataa ggtcacagcc ttacgtcttg aagaactacc ccaactatga tggaacccaa      840
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        <223> CA4, strain High Point

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accaacactg ttgggcaaga tgcaacagct gctaacacag cacccagctc tcatagtttg      120
aacactggcc tagtccccgc gcttcaagct gctgagacag gagcttcatc cacagccacg      180
gatgggaatt tgattgagac tagatgtgtt gtaaactcca atggtacacg tgaaacccac      240
attgagcatt tcttctctag gtcagggctg gtgggagtta tggaggtaga tgatacgggt      300
actagtggca agggattctc aaactgggac attgacatca tggcgtttgt gcaactgcgc      360
cgtaaactcg aggcatttac atatatgcgg ttcgacgcag agtttacctt tgtcaccaat      420
ttggagaacg ggctcacgaa taatagtgtg atacagtaca tgtatgtacc acctggagcg      480
cctaaacccg atgcccggga tcattccag tggcaaactg caaccaatcc gtcagtcttt      540
caaaaaatgg acagtccgcc acctcaagtt tcagtaccct tcatgtcacc agccagtgcc      600
tatcaatggt tctatgacgg ttaccccacc tttgggcccc actcggagac atctaatcta      660
tcttacgggc aatgtcccaa taatatgctg ggaacattct cggccagggt tgttagcaag      720
caaatcacca atcagaaatt ccagatccgt atttatctac ggctgaagag ggtgagggcg      780
tggatcccca gacctttgag atcgcagccg tacatttaca gaaactaccc cacctatggt      840
actaccatcc aatacctggc caaagatagg cgcaagatca ctgaaactga ttataatgct      900
gaacagcgca cgcat                                                      915
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        <213> Enterovirus

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agtggaccaa ttcagccagt gacagcggcc aacacctctc ccagttcaca tcggcttggt      120
acggggcaag tgccagcttt gcaagcagca gaaacgggag ccacctcgaa tgcgaccgac      180
gagagtttga ttgaaaccag gtgtgtggtc aacagacatg gagtcatgga aactagcatt      240
gaacacttct tttcacgctc aggcttggca ggaattttga taattgagga ctccggtact      300
tccacgaaag gctacgccac ttgggaaatc gatgttatgg gatttgtcca gctgaggcgt      360
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```
aaactagaga tgttcacata catgcgattt gatgcagagt tcacctttat cacagcagaa    420
aggaatggca acaccagccc aatacccatc cagtacatgt atgtcccacc cggagcccca    480
gtccctactg gtagggagac attccaatgg caaacagcga ccaatccatc cgtgatctca    540
aagatgactg atccaccagc ccaggtgtct gtaccattta tgagcccagc cagtacttat    600
caatggttct acgatggcta ccccacgttc ggagaagttc cagtgactac gaacttgaac    660
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tctacaggca aggacgtcac tgtgcgcatt ttcatgaagt tgaagcatgt gcgcgcctgg    780
gtgccaaggc ccatcaggag ccagccttac ttgttaaaga attatcccaa ctttgacaag    840
tcaaatattg tagacgcatc atcgaacagg acatatacca ccact               885
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        <213> Enterovirus

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tcacgtgtta cagcggccaa cactgctgct agctcccatt cccttggtac tggacgcgtg    120
ccggcgttgc aggctgcgga gacaggggca agttccaacg ctagcgatga gaacctgatt    180
gaaactcgtt gtgtgatgaa tagaaatgga gttaacgaag caagtgtaga acacttctac    240
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tacacggtgt ggcccataga tgtgatgggc tttgtgcaac agcggcgcaa gttagagcta    360
tctacttaca tgcgctttga cgctgaattt acctttgtgt ccaatctcaa tgacagcaca    420
acacccggca tgctattgca gtacatgtac gtgccgccgg gtgcgcccaa accagacggt    480
aggaagtcat atcaatggca aacagccacc aacccttcaa tattcgcaaa gttgagtgac    540
ccaccgcccc aagtgtctgt cccattcatg tcaccggcgt cagcctacca gtggttctac    600
gatggttacc ccacgtttgg cgaacacaag caagctacta atttacaata cggtcagtgc    660
cctaacaaca tgatggggca ttttgctatt cggacagtta gtgaatccac caccgggaaa    720
aatgtccatg tccgggtgta catgagaatt aagcacgtaa gagcatgggt gcccagacct    780
ttcagatccc aagcttacat ggtcaaaaac tacccgacat acagccaaac aatatccaat    840
actgcagccg atcgtgcgag cataaccact acggactatg agggtggcgt accagcaaac    900
ccgcagagaa ctttt                                                     915
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ggagacgaaa tactcgacct aatcgagagt gctgtacaga ataccactaa agccattacc     60
agctcaatcg acaccaaaac tggtgctaac actcaagcta gccaacatcg tataggcttg    120
ggggaggttc ccgctcttca agctgctgag acaggatcgt cttcgctcgt ttcggacaag    180
aacatgatag aaacaaggtg tgtcgtaaac aaacacagca cagaggaaac cagcattaca    240
aacttctact ccagggcggg cctagtgggg gttgtgaaca tgccagtaca aggaaccagc    300
aacacaaagg gtttcgcaaa gtgggggata gatataatgg gctttgtgca gatgaggcgc    360
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aaacttgagc tcatgacata catgagattc tccgccgagt ttacgttcgt acccagcact    420
cctggggag agactactaa ccttatactg caatacatgt atgcacctcc cggagctccg    480
ctgccaacca ggcgggattc atacgaatgg caaacatcca ctaacccctc tattatcagc    540
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aaaccgaccc aatcagttac catacgtata tacatgagat taaagcatat ccgtgcatgg    780
gtgccccggc cactgaggag tcagaattac actatgagga attacccgaa ctacaacggg    840
ggcgcaataa aatgtacatc aaaaagcaga gctaccataa caacctta              888
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gccccatcac acgacactac agcagccaac acctcagtga gtaatcataa aattggtacg    120
ggggatgtcc cagctctcca agctgcagag actggcgcta cttccaatgc ctcagacgag    180
aacatgattg agacacgatg tgtgttaaat cgcaatgggg ttgtggaaac tagtttggac    240
catttctttt caagagcagg ccttgtggga gtgatcaatg tgcaagatgg cggcactcag    300
aagggttttg aagtgtggga catagatgtc atggggtttg ttcaactcag gaggaagttg    360
gagatgttca cgtacatgag gttcaacgcc gagttcacat tcgtatccac actcgcggat    420
ggcacaactc ccagagtgat gttgcagtac atgtacgttc cacctggtgc ccccaaacct    480
caggagagag attcgtttca gtggcaaact gcaaccaacc catcagtatt ttgcaaaatg    540
agtgaccctc ctccacaggt ttccgttcct ttcatgtcac cagctagtgc ctaccaatgg    600
ttctacgatg ggtacccaac attcgatgat cgaccggcca cctcaaacca cccgtacggt    660
cagtgcccca ataacatgat gggcacattc gcagtgcggt ttgtcagcaa gaccccagcc    720
acacgggatc tgcgtgtcag agtgtacatg cgcctgaaac acgtgcgcgc atgggtaccg    780
agacctatcc gatctcaacc ctatattttg aaaaactacc caaattatga tggcacaaag    840
ataacgtcga catctaagga taggcaaagc atcaaaacaa ca                       882
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        <213> Enterovirus

        <220>
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        <223> CA10, strain Kowalik

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ggcgacccccg tggaggacat catccacgac gctttgagca gcactgtgcg gcgggccata     60
actagtggtc aagatgtcaa cacagcggcc ggtaccgctc ctagctctca caggttggag    120
actggtcgtg ttcccgccct acaagcagca gaaactggag ccacttctaa cgctacagat    180
gagaacatga tagaaacgcg gtgtgtcatg aacagaaatg gagtgttgga ggcgactata    240
agtcatttct tctcacgctc aggtttggtg ggtgttgtca atctaactga cggaggcacc    300
gatacaacgg gatatgcagt gtgggacatt gacatcatgg gttttgtgca actgcggcgg    360
aaatgtgaga tgttcacata catgagattc aacgctgagt tcacattcgt cactacaaca    420
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gaaaatggcg aggcaaggcc atttatgtta cagtatatgt atgtacctcc aggtgcccct    480
aagccaacgg gtagagatgc tttttcagtgg caaacagcga caaatccatc cgttttcgtt    540
aagctcacag atccacctgc tcaggtatca gtcccttca tgtcacctgc tagtgcctac    600
caatggttct atgacgggta tccaacattt ggacaacacc cggaaacatc taatacaaca    660
tatggacagt gccctaacaa catgatgggg accttgctg tgagagtagt gagtagagtg    720
gctagccagc tcaaactaca gacacgagtg tatatgaagc ttaagcatgt gagagcatgg    780
atccctaggc caataagatc ccagccttac ctcctaaaga attttccaaa ttatgatagt    840
agtaagatca catacagcgc aagagatcgt gccagcataa aacaagctaa tatg          894
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        <220>
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        <223> CA11, strain Belgium-1


        <400> 31
gggccaatag aagaaatcat ctcaactgtt gccagtaacg cgttggcgct cagtcaaccc     60
aagccagtgg acaactctgt acaaaacacc caacaaagtg ctccagtgca tagccaggag    120
gtgccagcat tgaccgcagt ggagacaggg gcgacaagtg atgtggttcc atctgaccta    180
attcagacta gacacgtatt gaatgttaaa tccaggtctg aatccaccat cgagtcattt    240
tttgcaagag ctgcatgtgt aaccattatg caggtggaca atttcaacgc aacctctgtg    300
gaagacaaaa gaaagttgtt tgctaaatgg gcaatcacct acactgatac cgtccagctg    360
agacggaaat tagagttttt cacttattct agatttgact tagagatgac ttttgtgcta    420
actgagagat actactccca aagctcaggg catgctagat ctcaggtgta ccaaattatg    480
tatgttccac caggggcacc cacgcctagt gcatgggacg actacacatg gcaaacatcc    540
tccaacccat ccattttctt taccaccggc aatgcaccac cgcgcatttc aattccattt    600
gttggaatcg ccaatgcata ctcacacttt tatgatggct ttagtagagt acctttggag    660
ggagaaacaa cagacacagg agacgcttac tacgggctca cttcaataaa cgattttggt    720
acacttgcag tcagggtagt taatgactac aacccagcca gggtggagac aaggattaga    780
gtatacatga agcccaaaca tgtgagagtc tggtgcccgc gacctccaag agcggtaagc    840
tacagaggac ctggagtcga cctcctatca acatcagtaa cacctttatc caaacatgac    900
ctagcgacat ac                                                        912
```

```
        <210> 32
        <211> 888
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> CA12, strain Texas-12

        <400> 32
ggagatacag tgagtgatat gatcgaaaat tccatcaacc gaattaccag tgcaatttcc     60
actacccaga cacaccagac agcagctgac actagagtta gtacacacag gttaggcacg    120
ggggaggtgc cacctttaca agcagcagag acaggtgcca cctccaacgc aaccgacgag    180
aacatgattg aaacacgctg tgtcgtcaac aggcacgggg tgagcgagac cagcgtggaa    240
tacttcttct ctcgctctgg tttggcagga atagtcatcg tggaggatgc aactgccact    300
aataagggtt atgccacatg ggagattgat gtcatggggt tcgcgcaact gcgtcgcaag    360
```

```
ctggagatct tcacatacat gcgcttcgat gcagagttca cttttgtggc aacagaacgc      420
aatgggagca ccagcccggt catgatgcag tacatgttcg tgccccctgg cgcccctgtt      480
ccaacaggga gagatacctt ccaatggcaa tctgctacta acccttcagt gctagtaaaa      540
atgacggatc caccggccca agttgccatc cccttatgt ctccagctag tgcataccaa       600
tggttctatg atggatatcc tacctttgga gaaagaccag ttacaaccaa catgaattat      660
ggacagtgtc ccaacaacaa aatgggaact ttttgtatac gcactgtctc cggtgaagcg      720
tcagggaaaa acatcactat acgtattttt atgaggttga agcatgtaag agcgtgggtg      780
cctcgcccaa ttagaagcca gctatatctg cttaaaaatt accccaactt tgataacact      840
aagatcctca acgcctccca caacagagct tctatcacat caaacaca                  888
```

        <210> 33
        <211> 927
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> CA13, strain Flores

        <400> 33
```
gggttggaag atctaataca acaagttgcg tctaacgcat tacaattgtc ccagccaaca       60
agaccggcac tcccaccagc cgagcagagt gtccccaaca ctaaccaaac aactccagaa      120
cactccaagg aagtcccagc gttaacggca gttgaaactg gcgccacgaa tcctctagag      180
cctggcgaca cagttcagac tagacatgtg atacaaacta gaagtagaag tgaaagtaca      240
gtggagtctt tctttgcgcg aggtgcatgt gtaaccatta tgggagtgga caactataat      300
gagacattga aaggagacca gaagtctact ctatttacaa cctggaacat cacctacact      360
gacacagtcc agctacggag aaaactggaa atgttcactt actccaggtt tgacatcgag      420
tttacttttg tggtgactga acgctactac tcatcaaaca gtgggcatgc tctgaaccaa      480
gtgtaccaaa ttatgtatgt accacctgga gcaccagtgc caaagaaatg ggatgattac      540
acctggcaaa cctcttcaaa cccgtccata ttctacactt atgggtcagc accacccagg      600
atatccatac cctttgtggg tatagcaaac gcttactccc acttctatga tgggtatgcg      660
acagtgccct tgaaaactga caccacagac tcaggagcag cctactatgg agcagtatcc      720
ataaacgact tcggactgct tgcagttcgc gtcgtcaatg aacataatcc agtcagagta      780
tcatccaaaa ttagagtgta tatgaaacca aaacatgtca gggtatggtg tcccagacct      840
ccaagggctg tagagtatta tggaccagga gtggactaca aggcaaacac tttaacaccg      900
ttgccaataa agaatttgac tacttat                                         927
```

        <210> 34
        <211> 888
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> CA14, strain G-14

        <400> 34
```
ggtgacaaag tggcagacat gattgagacc gcagtggaga agaccgtgtc ctcactaact       60
tcccctattc aaaccccccac agccgccaac acaaacgtga gtaatcatcg aattgagctg      120
ggggaagtcc cggctttgca agctgctgaa accggcgcga cgtctcttgt gtctgatgaa      180
tacttgatag agactcgttg tgtagtgaat agccatagta cagaggaaac tacagtgggg      240
cacttctttt caagagcggg gttggtggga gtgattgacc tcccattaca gggaacagtc      300
aacacaggag gattcgcctc gtgggatatt gatgtaatgg gatatgttca gatgagaagg      360
```

```
aaacttgagc tgttcacata tgcccgcttc gatgcggagt ttaccttcat agcttccacc    420
ccagatggcg aggtgaagcc agtgttctta cagtacatgt tcgtcccccc tggtgcacca    480
aaaccaacag ggcgcaacac ctacgaatgg caaactgcaa caaacccttc tgtgttggtc    540
aagagcacag atcctccagc acaagtctct gtaccgttca tgtcaccagc cagcgcatat    600
cagtggttct atgacgggta cccaaccttt ggaaagcacc tgcctgctga tgactttcag    660
tacggtatga ccccaaataa catgatggga tcgttctgtg ccaggatagt gggggaagga    720
gcgcctagtg tacacttggt tatccgtatc tacatgcgca tgaaacacgt gcgggtgtgg    780
attccacgac ctatgcgcag ccagccatac gttgcgaaga attaccctaa ctacaagggt    840
tctgagatca agtgcgcatc atctagtcgt aagtcaatca ccacatta                888
```

```
        <210> 35
        <211> 912
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> CA15, strain G-9


        <400> 35
gggccaatag aggagatcat ctcgaccgtc gccagcaatg cacttgccct cagtcagcct     60
aaaccggtgg ataattctgt acaaacacc caacagagcg cgcccgtgca cagccaagag     120
gttccagcat taacagcagt agagactgga gcaacaagtg atgtggtgcc agctgatcta    180
gtgcaaacca ggcatgtagt gaatgtcaag tccagatctg agtccactat cgagtcgttc    240
tttgcaagag ctgcctgcgt gactattatg caggttgata actttaatgc caccaccacg    300
gaggacaaga ggaagttatt tgccaaatgg gccatcacat acacagacac agtacaattg    360
aggaggaaat tggaattttt cacgtactcc aggttcgatc ttgagatgac tttcgtgcta    420
actgaaagat actattctca gagctcggga cacgctagat cgcaggtgta tcaaatcatg    480
tacgtccctc caggagcacc aacaccaaat gcatgggatg attacacgtg gcagacgtct    540
tctaacccat caattttctt caccactggt aacgcacccc cacgggtttc aatcccattt    600
gtgggcattg caaatgctta ctcacacttt tatgatggct tcagcagggt acctttggaa    660
ggagagacca ctgactcagg tgacgcttat tatggcctca cttctatcaa tgactttgga    720
acacttgcag taagagtggt caatgactac aacccagcga gagtggagac aaggatcaga    780
gtctacatga aacctaagca tgtgagagtg tggtgtccac gaccccctag ggctgtgagc    840
tacagaggac ccggtgtgga cctactgtcc acctcagtga cgcccctatc taagcatgaa    900
ttgacaacgt ac                                                        912
```

```
        <210> 36
        <211> 918
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> CA17, strain G-12


        <400> 36
ggcattgaag acttgatcca acaggttgca tcgaatgcgc tgcaaatctc acagccgacg     60
cgtccggcac tgccctctac agaaagtctt cccaacacac aacaatcggc accttcgcat    120
tctcaagagg tcccggcgct gacagcagtt gagacaggcg cgacaaatcc attggagccg    180
tctgacacgg tacaaacaag gcatgttatc cagactagat ccaggtcaga gtccacaata    240
gagtccttct tcgcgcgtgg tgcatgtgtg acaatcatga cagtggaaaa ttttaacgcg    300
actgaggcgg cagacaagaa aaagttgttc gccacttgga atattacata cacagacaca    360
```

```
gtgcagctca gaaggaagtt ggagatgttc acttactctc gatttgacat tgaatttacc    420
tttgtcacca cagaaaggta ctacgccagt aactcaggcc atgcgcgtaa tcaggtttac    480
caactcatgt atgtacccc aggagcccct gtgccacaac aatgggatga ttacacgtgg    540
caaacttcct ccaacccatc ggtgttttac acatacggtg acgctccagc gcgcatttcc    600
ataccatttg tagggatagc taatgcctat tcccactttt atgacggcta tgcagtggtg    660
ccattgaaag attccaccca ggatgctggt gctgcctatt atggtgcaac ctcaattaat    720
gattttggaa tgttggcggt gagagtagtc aacgaattca acccagccag aatcacatct    780
aaattgagag tgtacatgaa accaaagcat gttagggtgt ggtgtcctag accaccaagg    840
gtggtgccgt acttcggacc cggtgttgat tataaggata gtttgacacc gctttctaca    900
aaagcactca acacttat                                                   918
```

<210> 37
<211> 927
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> CA18, strain G-13

<400> 37
```
ggcttggaag acctcatcca acaagtggcc acgaatgcat tgagtctgtc gcagcccaca     60
agacccgcac ttccaccagc agaacaaagt gtgccaaaca ccagtcagac caccccagaa    120
cattcaaagg aagtacccgc actcactgca gtggagaccg gtgcaaccaa cccattggaa    180
ccaggtgaca cagtgcaaac tagacatgtt gttcaaacaa gatcaaggag cgaaagtacg    240
gtggaatctt tctttgcaag agggggcgtgt gtcacgatta tgggagttga caattacaat    300
gaaagcttga ccagtagtca aaaatccacc ctattcgcca cttggaatat tacatacact    360
gatacagtac agttgaggag aaaattggaa atgttcacct actccagatt tgacattgaa    420
tttaccttcg tagtaactga acgttactac tcgtcaaaca gtggccatgc cttgaatcag    480
gtgtatcaaa tcatgtatgt gccaccaggc gctccaattc ctaagaagtg ggatgattat    540
acctggcaaa catcatcaaa cccctcaata ttctacacct atggaacagc accacccaga    600
atttcgatcc cttttgtggg cattacaaac gcgtactcac atttttatga cggatatgcg    660
actgtaccac tcaagacaga cactacggat ccggggggcgg ccttctatgg agcagtttcc    720
atcaatgact ttggtttgtt ggcggtgcga gttgtcaacg agcacaaccc ggtaagagtg    780
tcttcaaaga taagagtgta catgaagcct aaacatgtca gagtgtggtg cccacgacca    840
ccacgtgccg tggagtacta cggaccaggg gtagattaca aggcaaacac attgacacct    900
ctccctacca agaacttaac tacttat                                         927
```

<210> 38
<211> 888
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> CA19, strain 8663

<400> 38
```
ggtattgatg atatcataga taatgttgta accaatgctt tgaaggtgtc catgccacaa     60
gttcaagata cgcaatctag tggaccagtt aactcaaaag aagtacctgc attaacagct    120
gttgaaacag gggctactag tcaagttgac ccatcagacc taatagaaac tagacatgtt    180
attaataacc gcctcagatc tgagtgcaca atagaatcat tctttgggag gtcagcatgt    240
gtggccataa ttgggttatc taaccaaaaa cccaccagtg acaatgcagc caagctcttt    300
```

```
gctacatgga agattagtta tcttgatatg tatcaattga gaagaaaatt ggaattcttc   360
acatactcca gatttgatct tgagttaacc tttgtaattt cagaaagatt cttcacctca   420
acttcagctg ctgcaagaga ttatgtatac cagatcatgt acattccccc aggagcccct   480
atccctcagg tatgggatga ttacacatgg caatcatcca caaacccctc aatattctac   540
accacaggaa atgcatgccc tagagtgtcc atcctttttg ttgggatcgg tgcagcatac   600
tctcacttct atgatggatt ctctttagta cctttcaata ccatcgatgc tggtgcttca   660
aacaggtacg ggtacaccac cataaatgat tttgggacta tggcaatcag gatagttaat   720
gaatacgacc cagtcacaat tgatgcaaaa gtcagggttt acatgaaacc aaagcatatt   780
aaggtgtggt gccccagacc tccacgggca gtagcataca atgggccaac agtgaatttt   840
aatgaaaacc cccatgtaat gacagcagtt gctgatatta gaacttat              888
```

<210> 39
<211> 909
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> CA20, strain IH-35

<400> 39

```
ggtatcgaag atcttatcac cgaagttgca agcaacgctc tgaagttgtc acaaccaaaa    60
cccagcacac aacagagttt accaaacact agtagctcag aaccaactca ctctcaggaa   120
gcgccggcat tgaccgcagt agaaacagga gcaactagta gcgtagtacc agctgatctg   180
gtccagacgc ggcatgtgat acaaacacgt agccgaagtg agtctacagt tgagtcattc   240
tttgctcggg gggcgtgtgt aacaatcatg tcagtggaaa attacaatga aaccgctatc   300
gcagagtcca aattatttac caagtggaac attacctaca cagacacagt ccagttgaga   360
agaaaactag agatgttcac atactccaga tttgatattg agttcacatt tgtggtgact   420
gagcgttacc actccgcaaa ctcaggtcat gcactaaatc aagtttacca gatcatgtat   480
gttcctccag gtgcaccagt gccacaaaga tgggacgact acacatggca aacgtcatcc   540
aaccccctcag tcttttatac ctatggtaca gcaccagcca gaatatcgat tccatatgta   600
ggcatagcca atgcctactc gcatttttat gatggcttcg ccaaagtgcc cattgaaggc   660
gagacgtcag atccaggtga tgcatactat ggtgcaacgt ccatcaatga tttcggcatc   720
ttagccatac gtgtggtcaa cgaacacaat ccagtgcaag tttcttccaa gattagagtg   780
tacatgaaac ctaaacatgt gcgcgtttgg tgtcccagac cacctagagc tgttccatac   840
tttggccccg gggttgatta taaaggtgac gccctcacac cactatcacg caaggattta   900
accacctat                                                          909
```

<210> 40
<211> 888
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> CA22, strain Chulman

<400> 40

```
gggattgagg atacaatcga aaaagtggtt ggtgatgctc taagggtctc aatgccacaa    60
gttgccaaca cccagccatc aggaccgta aattctaagg aagttccagc actgacagca   120
gtggaaacag gtgcaaccag tcaagtcacc cctgaagatt tgatcgaaac caggcatgtt   180
attaacaata gactaagatc tgagtgcact gtggaggcct tctttggaag gtctgcatgt   240
gttgccatcc ttggtgtggt aaacaaaaag ccagacacca caaatgccaa agacctcttt   300
```

```
acaacatgga ggatcactta cctgcaaact tatcaactga ggaggaaact cgaactcttc    360
acgtattcta gatttgattt ggaattaacg tttgtcatta cagaaagata cttttcaggg    420
acagcagcca caaccagaga ttatgtttac caaataatgt atgtaccacc aggagccccc    480
ataccaaata cctgggacga ctacacctgg cagtcatcta ccaacccctc tgtcttctac    540
accacaggca atgccagccc acgcatgtct atacccttg ttggtattgg tgccgcctat    600
gctcactttt atgacgggtt cagtgtggta ccattcaatc aaatagatgc aggagcatcc    660
aacaaatatg gctactcatc aatcaaagac tttggtacat tggcagttag aattgttaat    720
gagtttgatc cagtgacaat agaggctaaa gtcagagtgt acatgaaacc caaacatgtc    780
agggtgtggt gtccaagacc acctcgtgca gtaccatatc aaaactcatc agttgatttc    840
gcccaaaacg cagtagcaat gaaccaagta gccacaatta ggacgtat                 888
```

```
        <210> 41
        <211> 915
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> CA24, strain Joseph

        <400> 41
ggtatcgaag ataccattga cactgtcatt aacaatgccc tacaactatc tcaaccacag     60
ccaaataagc agttgacagc tcagtctacc ccctccacaa gtggagtaaa ctcccaggag    120
gttccagctc tgaccgctgt ggaaaccggt gcctcgggac aagcagtgcc cagtgatgtg    180
attgagacca gacacgtggt taattataag acccgatctg aatctactct tgagtctttc    240
tttggaaggt cagcttgtgt caccataatt gaggtcgaga acttcaatgc cactagtgaa    300
gcagacaaga ggaaacagtt caccacttgg ccaatcacat acaccaatac cgtgcaattg    360
cgcaggaaac tagaattctt cacttactcc aggtttgacc tagagatgac ctttgtagtg    420
acagaaagat attatgccag caacacaggt cacgccagaa accaagtgta tcaaataatg    480
tacattcctc ctggtgcacc acaacccaca gcatgggatg attacacgtg gcaaagctct    540
tcgaatccgt cagtctttta cacttatggg agtgctccac caggatgtc tataccgtat    600
gtcggtatcg caaatgcata ctctcttttt tatgatgggt ttgcacgagt accactgaag    660
gacgaaacag cggactcagg tgatactttt tacgggctag tcaccatcaa tgattttgga    720
accttagcaa taagagtagt gaatgaattt aacccagcta ggattacatc aaaaaattaga    780
gtgtatatga aaccaaagca tgtaagatgc tggtgcccta gaccaccacg tgcagtgcca    840
taccgtggtg aaggagtaga ttttaattca agttcaatca caccactaac agcagtcgca    900
aacatcaaca cattc                                                     915
```

```
        <210> 42
        <211> 852
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> CB2, strain Ohio-1

        <400> 42
agcccagtgg aggaatccat tgagagaagc attggcagag ttgctgacac cattggtagt     60
ggaccatcca attcggaggc aataccggca ctcacagcag tagaaacagg acacacatca    120
caggttacac ctagtgacac gatgcaaaca agacatgtgc acaactacca ttcaaggtcc    180
gaatccagcg tagagaactt cctggcacgc tcggcttgtg tgttttatac aacatacacc    240
aacggtaaaa aaaaaaatgc cgccaaagag aagaagtttg caacgtggaa agtgagtgtt    300
```

```
agacaagccg cccaactaag aagaaagcta gagttattca catacttacg ctgtgacatc    360
gaattaacat tcgtcatcac cagtgcacaa gatccatcga ccgctaccaa cttggatgtg    420
ccagtgttga cccatcaaat aatgtacgtc ccacctggtg gtccagtccc tgaaaccgtg    480
gacgattaca actggcaaac atctacaaat cccagccttt tttggactga agggaatgca    540
cctccacgca tgtcaattcc attcatgagc ataggcaatg cctatagtat gttctatgat    600
ggttggtccg agtttaggca tgacggtgtg tacggcctga atacccttaa caatatgggc    660
acaatatatg ctaggcacgt caacgctgac aacccaggta gcatcaccag cacagtgaga    720
atatacttca aacccaaaca tgtcaaggca tggattcctc gcccgcctcg tttggcacag    780
tatcttaaag ccaataatgt gaattttgag atcaccgatg tgacagaaaa gagagatagt    840
ctcacgacca cg                                                        852
```

```
<210> 43
<211> 846
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> CB6, strain Schmitt

<400> 43
agcccagtgg agggcgccat agagagagcc attgcacggg tcgctgacac tatgccaagt     60
ggcccaacca attcagaagc agtgcctgcc ctgacagcag tggaaacggg ccacacctcc    120
caagtcgtcc ccagtgataa catgcaaacc aggcacgtga agaagtacca ttcacgctcc    180
gaaaccagcg tcgagaactt tctgtgtagg tctgcatgtg tatattttac cacatataag    240
aaccagacag gggcgaaaaa tagatttgct tcttgggtaa tcaccacaag acaagtggcc    300
cagctcagga gaaaactaga aatgtttacg tacttgcgtt tcgacattga actcaccttt    360
gtcattacaa gtgcgcaaga ccaatccact atttcccaag acgccctgt gcagacacat     420
cagataatgt acgtgccacc gggaggccca gtgccaacca aagttgacga gtatgtgtgg    480
caaacatcca ccaacccag cgtcttttgg accgagggta acgctccacc acgtatgtca    540
gttcccttta tgagtatcgg taatgcttat agcacatttt atgacgggtg gtctgatttt    600
tcaaacaaag gaatatatgg gttgaacacc ttgaacaaca tgggaacatt gtacatccgc    660
cacgttaacg ggcccaaccc agtaccaatt accagcacag tgaggatata ctttaagccc    720
aagcatgtta aggcctgggt gcctaggcct ccaaggcttt gccagtacaa aacgtttagg    780
caagtcaact ttacagtgac tggagtgacc gagagtaggg caaatataac caccatgaat    840
actaca                                                               846
```

```
<210> 44
<211> 852
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E1, strain Farouk

<400> 44
ggtgatgtgc agaatgctgt cgaaggggct atggtcaggg tggcagatac agtgcaaact     60
tcagccacaa actcagagag ggtgcctaac ttgacagcag tagaaactgg tcacacttcg    120
caggtagtac ctggtgatac catgcagact agacatgtga tcaacaatca cgtgaggtca    180
gaatctacaa ttgagaactt ccttgccaga tcagcgtgtg ttttcttcct agagtacaag    240
acaggacca aagaggattc caatagcttc aacaattggg tgattacaac caggcgagtg     300
gctcaactac gtagaaaact ggaaatgttt acttacctac ggtttgacat ggaaatcacc    360
```

```
gtggtcatta caagctcgca agatcagtct acatcacaaa accagaatgc accagtgcta      420
acacaccaga taatgtatgt accaccaggg ggacccatac ccataagcgt ggatgattac      480
agctggcaaa catccaccaa ccccagtatc ttttggaccg aagggaacgc tccggcacgc      540
atgtcaattc catttattag cataggcaat gcgtatagta atttctacga tgggtggtct      600
cacttctccc agactggcgt gtatggcttc actactctga caacatggg tcaattgttc        660
ttccggcacg taaacaagcc caacccagcc gctattacaa gtgtggcgcg catttacttc      720
aaaccgaaac atgtacgcgc ttgggtgcct agaccaccgc gcttgtgtcc atacatcaat      780
agcacgaatg tcaactttga acccaagcca gtgactgaag tacgtaccaa cataataaca      840
                                                                        852
acgggtgcct tc
```

```
        <210> 45
        <211> 882
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E2, strain Cornelis

        <400> 45
ggagatgagg tgaagcatga acccacagtg gccaacacaa cagcaagtgg accatcaaat       60
tcacaacaag taccggcact cacagcagtg gagactgggc acacctcaca ggtggttcca       120
agcgatacca tacaaaccag acatgttcac aattaccata gtagaactga atccaccctg       180
gagaacttcc tcggaagatc agcatgcgtg cacattgact cgtataagac caagggagtg       240
accggcgaga gcacccggta cgcatcatgg gagatcacca ctcgcgagat ggtgcagctg       300
cggaggaagt gtgaactctt cacctacatg cgatatgatc tagaaatcac gtttgtgatt       360
acaagtcgcc aggagcaagg ggccaaactg tcgcagaaca tgccagtatt aacacatcag       420
atcatgtatg tcccaccggg cgggcctata ccaaccagca acgagagtta cgcttggcaa       480
acgtcaacga acccaagcgt gttttggaca gaaggaagct cgccaccacg aatgtcaata       540
ccgtttgtta gcataggaaa cgcatacagc aatttctatg atgggtggtc gcacttctca       600
caaaacggtg cgtatggtta cacggcacta aacaagatgg gtaggatatt cgtgcgccat       660
gtaaacaaag agacaccact gcaagtcata agcacaatac ggatgtatat gaagcccaaa       720
cacgtgcggg cttgggtgcc aagaccacca cgcctgtgtc catacctgcg ggcgggtgat       780
ataaactttg aagtgactga tgttacagaa aaacgaaata acatcaatta tgtcccaacc       840
                                                                        882
ccatcccaca gcagcagtgt gcacatgcgc ttgaacaacc at
```

```
        <210> 46
        <211> 879
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E3, strain Morrisey

        <400> 46
ggggacgtcg aagaggcaat tgatagggca gttgcgaggg tggctgacac aatgccaacc       60
ggtccacgaa acactgagag cgtgcctgcc ctgacagcag tagagacagg ccacacctca       120
caggtcgttc ctggtgacac aatgcagacg aggcatgtta agaactatca ctccaggaca       180
gagtcatcaa ttgaaaactt cctgtgcagg ctgcgtgcg tgtatataac aacatacaaa        240
tcagctggtg gaacacccac agagcgatat gcaagttgga ggataaacac caggcaaatg       300
gtgcagctca ggaggaaatt tgagctcttc acatacttgc gctttgacat ggaaatcaca       360
tttgtgatca caagcacaca agatcctggg acacaattgg cacaagatat gcctgtacta       420
```

```
actcatcagc tcatgtatat cccacctggg ggccctgttc ctaacagtgc cacagatttt        480
gcatggcaat catcaactaa tccaagtata tttttggacgg aaggctgtgc tccagcacga        540
atgtcggtgc cgttcatcag cattggcaat gcctacacca atttttacga tgggtggtcg        600
catttcaccc aagaaggggt ttatgggttt aactcactga caacatggg ccacatatat         660
gtgaggcacg tcaatgagca aagcctgggt gtctcgacca gcaccgttcg cgtgtatttt        720
aaacccaaac atgtgcgtgc ttgggtacca agaccaccca gactgtgccc atacactaag        780
agttcaaatg tgaatttcaa accgaccgct gtcactgatg agcgaaagga tatcaacgat        840
gtaggcaccc ttcgaccaac agtgtacact aaccttgtg                              879
```

<210> 47
<211> 843
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E4, strain Pesacek

<400> 47
```
ggagacgtgc aagatgcagt gacaggtgct atagtacgtg tcgctgacac tctcccaaca        60
ggtccctcaa ataatgaagc tatacccaat ttaacagcag tggagactgg ccatacctcg        120
caagtgacac caggcgacac aatgcaaaca cgccatgtgg tgaacatgca cacccgctct        180
gagtcgtcca tcgagaattt cctggcacgt tcagcatgcg tgtactacct tgattaccaa        240
acgggagaag ggcccggcga tcagtatttt ggccagtgga ccattaccac gaggagggtt        300
gcgcaattgc gtcgaaagct ggagatgttc acttatctaa gatttgacat ggaaatcaca        360
atcgtgatta ctagttcaca ggatcaatct accatctcga acccagatac accagttttg       420
acgcaccaaa ttatgtatgt accaccagga ggaccaatcc cagcaaaagt cgatgattac        480
agttggcaaa catccacgaa tcccagcgta ttctggactg aagggaatgc gcctgcccgr       540
atatccatcc cattcattag cgttggaaat gcatacagta gcttttatga cgggtggtcg        600
aacttctcac aaaacgggcg gtatggctac aataccctca caacatggg acaattgttc        660
tttaggcacg ttaacaaacc cagccctaat actgtcacaa gcgtcgcccg catatacttc       720
aagcctaagc acgtgagagc ttggatcccg cgaccaccgc ggttgtgtcc atacataaat        780
gcgggagacg tgaacttcac tccgacacca gtgactgaaa agcgaaagga cctaataacc       840
acg                                                                     843
```

<210> 48
<211> 843
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E4, strain DuToit

<400> 48
```
ggagatgtgc aggacgcagt ggctggggcc atagtgcgtg tggctaatac tctcccatca        60
ggcccctcaa acaatgaggc tatacccaac ttaacagccg tagaaactgg acacacctcg        120
caggtgacac cgggtgatac aatgcagacg cgccacgtag tgaacatgca cactcgttct        180
gagtcgtcaa tcgagaactt cctggcgcgg tcagcatgtg tatactacct cgattaccga        240
acaggaacgg ggcctggcaa tcaatacttt agccagtgga ctattaccac aagacgagtt        300
gcgcagctgc gtcgaaaatt ggagatgttc acctatctaa ggttcgacat ggagatcacg        360
attgtaataa cgagttcaca agatcagcct accgtccgaa acccagacac accggtcttg        420
acacaccaaa tcatgtatgt gccaccagga gggccaatcc cagcaaaggt cgacgattac        480
```

```
tgttggcaaa catccacaaa ccccagtgtc ttctggactg aagggaacgc accagcccgg      540
atatccatcc cgttcatcag tgtcgggaat gcatatagta gtttctacga tggatggtca      600
aatttctcgc aaaatgggcg gtatggctac aacaccctga acaacatggg gcaattgttt      660
ttcaggcatg tcaataaacc cagtcccaac actgtcacaa gtgttgcccg catatacttc      720
aagcccaaac acgtgaaggc atgggtcccg cgaccaccgc gattgtgccc ttacattaat      780
gctggagatg taaatttcac ccccacatcg gtcactgaga agcgagcgag cctgataacc      840
aca                                                                    843
```

        <210> 49
        <211> 843
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E4, strain Shropshire

        <400> 49
```
ggggacgtgc aagatgccgt gactggagcc atagtgcgtg tcgccgacac actgcacacg      60
ggaccctcga acaacgaagc aatacccaat ttgacggccg tggaaacagg gcatacatcg      120
caagtgacac caggcgatac aatgcagacg cgtcacgtgg tcaacatgca cacccgttca      180
gagtcatcaa ttgagaactt cctagctcga tctgcgtgtg tgtattacct cgactatcaa      240
acagggtcag gacctggcac ccaatacttc ggccagtgga ccatctccac aaggagagtt      300
gcgcaactgc gccggaagtt ggaaatgttc acctacctaa gatttgacat ggaaataaca      360
atcgtgatca ccagttcgca agatcactcc accatctcaa atccagatac accaatcatg      420
acgcaccaaa ttatgtacgt accaccaggg ggtccaatcc cggcgaaggt cgacgactat      480
agctggcaaa catctacaaa ccctagtgta ttttggacag aagggaacgc acccgcccgc      540
atatccattc cattcattag tgtcgggaat gcctatagca gcttctacga cgggtggtca      600
aatttctcgc aaaacggccg atatggatac aacactttga acaacatggg acaactattc      660
ttcagacacg tgaataagcc cagccccaac accttcacaa gtgttgcccg tgtatacttc      720
aagccaaaac acgtgaaggc gtggattcca cgaccaccgc gattatgtcc atacataaat      780
gcgggagacg tgaatttcaa accaacaccc gtgaccgaaa agagggcgag cttaatcacc      840
aca                                                                    843
```

        <210> 50
        <211> 876
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E5, strain Noyce

        <400> 50
```
ggagactcag agcacgcagt ggaaagcgcc gtatctaggg tggcagatac aattatgagt      60
ggcccgtcaa actcccaaca ggtccccgct cttactgcag ttgaaactgg acacacatcg      120
caagttgttc caagtgatac catccaaacc agacatgtgc agaatttcca ctctaggtcc      180
gagtcgacca ttgaaaattt cctgagtagg tcagcatgtg tgcatatcgc caattacaac      240
gcgaagggcg ataagacgga tgtggacagg tttgacaggt gggagatcaa cattcgtgaa      300
atggtgcaac tacgtaaaaa gtgtgagatg ttcacatatc tacgctatga tattgaagtt      360
acatttgtta taaccagcaa acaggatcag gccccaaac taaaccagga tatgcctgtt       420
cttacccacc aaattatgta cgtaccccca ggaggttcag tacctagcac cgttgagagc      480
tatgcgtggc aaacatcaac aaaccctagc gtgtttggga ccgaggggaa cgctccagct      540
```

```
agaatgtcca taccctttat cagcataggg aacgcttata gtagcttcta tgatggatgg    600
tcacacttta ctcaaaaagg ggtctacgga tacaacacat taaacaagat ggggcagcta    660
tttgtcagac atgtgaacaa acagacccc acgccagtta ctagtaccat aagggtttac     720
ttcaaaccaa agcacattag agcttgggtc cctaggcccc cgcggttatg cccctatgtg    780
aacaagacaa atgtaaactt catcaccaca caggtaacag aacctacaaa tgacctcaat    840
gacgtgccca agtctgagca taacatgcac acatat                              876
```

```
        <210> 51
        <211> 867
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E6, strain D'Amori


        <400> 51
aacgacgttc agaacgcggt ggaacggtca attgttcgtg tagcggacac attacccagt     60
gggccaagca actcagaaag cataccagca ctcacagcag ccgagactgg acatacctcg    120
caggtcgtcc ccagcgacac catccagacg cgacatgtga ggaattttca cgttcggtct    180
gagtcatcgg tagagaattt cttagcagg tcagcttgcg tgtacatcgt ggagtacaaa     240
acccgggaca cgactcccga caagatgtat gatagctgga ttatcaatac caaacaagtg    300
gcgcagttga gaaggaagct ggagttcttt acctatgtca gattcgacgt ggaagttacc    360
tttgtcataa ccagcgtgca agatgactcc acaaaacgga acaccgacac cccagtgcta    420
actcatcaaa ttatgtatgt gccgccagga gggcccatac acaagcggt ggacgattat      480
aactggcaaa cttccaccaa ccccagcgta ttttggactg aggggaacgc gccaccaagg    540
atgtctattc cgttcatgag tgttggcaat gcatacagta acttctacga cgggtggtcc    600
cactttctc aaactggggt ttacgggttt aacaccctaa acaacatggg taagttatat     660
ttcaggcatg taaacgacag gactattagc ccaatcaaaa gtaaggtcag aatatatttc    720
aaacccaaac acgtgaaggc atgggtaccc agaccgccga gattgtgtga atacacccac    780
aaggataacg tggactatga accaaagggg gtcacaacat cacgcacttc aatcaccatc    840
accaactcca cacacatgga gacgcac                                        867
```

```
        <210> 52
        <211> 867
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E6, strain Cox


        <400> 52
aatgacgttc aaaatgcagt cgagcaatca attgttcgtg tggctgacac gttacccagt     60
ggacccagta attcagagag cataccggca ctgacggccg ccgagactgg ccatacttct    120
caagttgtgc ccagtgatac tatacagaca cgccacgtaa aaaactttca tgtgaggtcg    180
gagtcgtcag tagagaactt tctcagtagg tccgcttgcg tgtatatagt gggatacaag    240
accacagatg cgacccctga caaaatgtat gacagctggg ttatcaacac aaggcaggtg    300
gcgcagctaa ggagaaaatt agagttcttc acctatgtta ggtttgatgt tgaggtcacc    360
tttgtgataa caagcgtgca agacgattca actagacgga acacagacac ccccgttcta    420
acccaccaaa tcatgtacgt accccaggt gggcccatcc cgcaggcagt ggacgactac      480
aattggcaaa cttccacaaa tcccagtgta ttttggacag aagggaatgc cccaccaaga    540
```

```
atgtccatac cattcatgag cgtaggtaac gcatacagca atttctatga tgggtggtct      600
cacttctctc aaactggggt gtacggtttc aacaccctga acaacatggg caagctatac      660
ttcaggcatg tgaacggcaa gacaataagc cctatcgcaa gcaaggttag gatttacttc      720
aaaccaaagc atgtgaaggc atgggtgccc agaccaccgc gattgtgtga atacacccac      780
aaggacaatg tggattacga accaaaggga gtcacaacat cccgtacatc tatcacaatt      840
agcaattcca ctcatatgga aacatat                                          867
```

<210> 53
<211> 867
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E6, strain Burgess

<400> 53
```
aacgacgttc agaacgcggt ggaacggtca attgttcgtg tagcggacac attacccagt       60
gggccaagca actcagaaag cataccagca ctcacagcag ctgagactgg acatacctcg      120
caggtcgtcc ccagcgacac catccagacg cgacatgtga agaattttca cgttcggtct      180
gagtcatcgg tagagaattt tcttagcagg tcagcttgcg tgtacatcgt ggagtacaaa      240
acccatgaca cgactcccga cgagatgtat gatagctgga ttatcaatac cagacaagtg      300
gcgcagttga gaaggaagct ggagttcttt acctatgtca gattcgacgt ggaagttacc      360
tttgtcataa ccagcgtgca agatgactcc acaagacaga acaccgacac cccagtgcta      420
actcatcaaa ttatgtatgt gccgccagga gggcccatac cacaagcggt ggacgattat      480
aactggcaaa cttccaccaa ccccagcgta ttttggactg aggggaacgc gccaccaagg      540
atgtctattc cgttcctgag tgttggcaat gcatacagca acttctacga cgggtggtcc      600
cactttctctc aaactggggt ttacgggttt aacaccctaa acaacatggg taagttatat      660
ttcaggcatg taaacgacag gactattagc ccaatcacaa gcaaggtcag aatatatttc      720
aaacccaaac acgtgaaggc atgggtaccc agaccgccga gattgtgtga gtacacccac      780
aaggataacg tggactatga accaaagggg gtcacaacat cacgcacttc aatcaccatc      840
accaactcca cacacatgga gacgcac                                          867
```

<210> 54
<211> 876
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E7, strain Wallace

<400> 54
```
ggcgacaccg aaacggctat tgacaatgca atcgccaggg tagcagatac ggtggcgagc       60
ggtcctagta attcgaccag tatcccagca ctcacagcag ttgagacagg tcacacgtca      120
caagtcgagc ccagcgatac agtgcaaact agacatgtca aaaactacca ctcgcgttct      180
gagtcaaccg tggaaaactt tctaagtcgc tccgcttgtg tgtacatcga agagtactac      240
accaaggacc aagacaatgt taataggtac atgtcgtgga caataaatgc cagaagaatg      300
gtgcaattga ggagaaagtt tgagctgttt acatacatga gatttgatat ggaaatcacg      360
tttgtaatca caagtagaca actacctggg actagcatag cacaagatat gccgccactc      420
acccaccaga tcatgtacat accaccaggt ggcccggtac caaacagcgt aacagatttt      480
gcgtggcaga catcaacaaa ccccagtatt ttctggacag aaggaaacgc gccacctcgc      540
atgtctattc cattcatcag tattggcaat gcatatagca acttctatga cgggtggtca      600
```

```
cactttttccc aaaacggtgt gtacggatac aacgccctga acaacatggg caagctgtac      660
gcacgtcatg ttaacaagga cacaccatac cagatgtcaa gcacaatccg agtgtatttc      720
aaacccaagc acatccgagt atgggtccca cggccgcctc gactgagccc gtacatcaaa      780
tcaagtaatg taaatttttaa ccccacgaac ctgacggacg agcggtcatc catcacatat      840
gtgcccgaca ctatacgtcc agatgtgcgc accaac                               876


        <210> 55
        <211> 843
        <212> DNA
        <213> Enterovirus


        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E8, strain Bryson


        <400> 55
ggtgatgtcc agaatgcagt tgaggggggca atggttagag ttgcagatac cgtgagcact      60
agcgccacca actccgaaca agtgccgaac ctgaccgcgg tggagaccgg tcacacatcg     120
caggtagtgc ccggcgacac tatgcagacc aggcacgtag tgaacaagca tgtgcgatct     180
gaatctacaa ttgaaaattt cctcgcacgt tcagcctgtg tgtactttct tgagtacaag     240
actggtacca agactgactc caacgccttc agcaattggg tcatcacaac gcgcaaggtt     300
gcgcagctga ggcgcaagtt ggagatgttt acatacttaa ggtttgatat ggagattact     360
gtggtcatta ctagctccca agaccagtcc acatcacaaa atcaaaatgc gcccgtcctg     420
actcaccaga ttatgtatgt accacctggt ggcccagtgc ccactagcgt tgatgattat     480
tgctggcaaa catccacaaa cccaagcata ttttggacgg aaggaaacgc acctgccaga     540
atgtccatcc cctttatcag cattggaaat gcttatagca acttttatga tgggtggtca     600
catttctcac agaacggagt ctatggtttt accaccttaa acaacatggg ccagctgttt     660
tttaggcatg ttaacaagcc taacccggcg acaataacca gtgtggcccg catttacttc     720
aagccaaaac atgtgagggc ctgggtgcct agaccgccac ggttgtgccc ttacatcaac     780
agtagcaacg tgaacttcga cccaaaacct gtggcagagg tcaggtctag catcatcacc     840
acc                                                                   843


        <210> 56
        <211> 876
        <212> DNA
        <213> Enterovirus


        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E11, strain Silva


        <400> 56
ggtgatgtgg ttgaagccat tgagggcgca gttgctagag tagcagacac tatcagcagc      60
ggcccaacaa attctcaagc agtcccagca ctcacagcgg tggagactgg acacacctcg     120
caagttgtac caggtgatac catgcagacc agacacgtaa agaattacca ctcacgatca     180
gaatcgacca ttgaaaattt tctgagtagg gcggcttgtg tctacatggg tgagtattac     240
actacaaata cagatgagac caagagattt gctaattgga caatcagcgc aaggcgcatg     300
gtacaaatga ggaggaagct tgaaatgttc acgtacgtcc gtttcgacgt ggaggtgaca     360
ttcgtaatta ccagcaaaca ggaccaaggg aatcggttgg acaagatat gccccccgctc     420
acacaccaga taatgtacat cccgccaggt ggtcgtatac ccaaatccac cacagattac     480
gcatggcaaa cgtcgacaaa ccccagcatc ttttggacgg agggtaacgc gccccccagg     540
atgtccattc cctttcatgag cattggaaac gcatatagca attttttatga cggttggtct     600
cacttctctc aaaatggcgt gtacggatat aacacactaa accacatggg tcaattatac     660
```

```
atgcgccatg taaatggacg atcacctctt ccaatgacca gcacggtgag ggtgtacttc    720
aaacccaaac atgtgaaaac atgggtgcca cgaccccaa gattgtgcca atacaaaaac    780
gcctcgacag taaactttc acccacaaac atcacagaca agagggatag catcacttac    840
attccagaca ccgtgaaacc cgacatgaca acatat                              876
```

```
        <210> 57
        <211> 861
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E13, strain Del Carmen


        <400> 57
gggggatgaga gtgcaaaggc tacagtttcc aacacacagc ctagcggtcc aagtaattct    60
gtcagcgtgc caatgcttac tgctgctgag accgggcaca catctcaagc agtacccagt    120
gacactatac agaccaggtg cgtagtgaac caacacaagc ggtcggaatc atccgtggaa    180
aatttcctgt gtcgctccgc ttgcgtatac tacacaacct atgacactca cggggatgca    240
gccgacgcaa agtacgccag ttggacgata accacccgaa aagctgcaca gctgcggaga    300
aaactagaga tgttcacata cttgaggttt gatttagaag tgacattcgt tataacaagt    360
gcacaagtaa catctaccaa taaacgtcag gacacgcctg ttctcacgca tcaagtcatg    420
tacgtgccac caggtggtgc agtacccgct agtgtggacg attatgcgtg gcagacgtcc    480
acaaacccaa gtatcttctg gacggaaggg aatgcaccag cacgcatgtc tataccttt     540
atcagcgtgg gcaacgcata cagtagcttc tatgatgggt ggtccaactt tacacagaat    600
ggagtttacg ggttcaacac gctaaacaac atgggaaagc tatacgtacg acacgtcaat    660
ggagctagcc ccggccctgt gaagagtacc atacggtttt acatgaagcc caaacacgtg    720
aaggcttgga tacccagacc tcctcgcctc tgcgagtacg aaaaatcagg caatgtaaac    780
ttcaaaccca agggcgtgac agagagccgg acgtctatca aattagaaaa accaaaccct    840
gcgtccaaat taatgaacca c                                              861
```

```
        <210> 58
        <211> 894
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E14, strain Tow


        <400> 58
aatgatccag agcaagctat aaatcgggcg ctagcgaggg tggcagacac agttcgtagt    60
gggccgtcta actctgaaca aattcccgca ctgacagccg tggagacagg gcatacatca    120
caagtcgtcc ccagtgacac aatgcaaacc cggcatgtga agaattacca ctccaggtca    180
gagtcaacaa tagagaactt tttgtgtaga tcggcttgcg tgcacatcgc aacatacaag    240
gctaaaggcg gagctggaga cgtcgaccgg tacgacagct gggacataaa cataaaagag    300
ctggtacagt tgcgacgcaa gtgcgagatg tttacgtacc taaggtttga tatggaggtc    360
acctttgtga ttaccagcat acaggagcag ggcaaagcac tgacccagga catgccggtg    420
ctaacgcacc aaataatgta cgttccaccg ggcggtgccg tgcctagtgg tgcagaaagc    480
tttgcgtggc agtcatcaac gaatcccagt gtgttctgga cagaaggcaa tgcaccagca    540
cgtatgtcta tacccttat aagtattggg aacgcttaca gtaatttcta tgatgggtgg    600
tcccactttta cccagaacgg tggttacggg tacaacacac taaacaaact gggtaagatc    660
tacgtcaggc atgtgaacaa acaaaccccc acggatgtca ccagcaccgt gcgaatttac    720
```

ttcaagccca aacacgtgcg agcttgggtg cctcgcccgc ctagactatg tccttataag   780
aacaaggcaa atgtaaactt tgaagttact agtgtaacca ctgccagaac gagtcttaat   840
gatgtcccca ctcccaacca cagtagtagc gtgcacctgc gcatgcacac gcac   894

```
<210> 59
<211> 882
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E15, strain CH96-51

<400> 59
```

ggtgatgacc aacacaagac caatacagtg acagacacag agcagagtgg cccgtcaaat   60
tccgaacgcg tcccagccct cacagcagtg gagactggcc acacttcgca ggtcgtaccc   120
agcgacacag tgcaaactcg ccacgtacgc aattaccact caaggacaga gtctacctta   180
gagaattttc ttggtaggtc agcatgtgtg cacatcgaca catacaaggc taagggtgaa   240
aaaggatctt ctgagaggta cgcgtcatgg gagataacta acagggagat ggtgcaattg   300
cgccgaaaat gtgagatgtt cacatatatg aggtatgacg tggaaataac atttgtgata   360
accagctacc aggagcaggg cacacgattg gcccaggaca tgcctgtact aacacaccaa   420
atcatgtacg tgcccccggg tgggcctgtg ccaacaagca cggagagcta tgcatggcag   480
acctcaacga accctagcgt cttttggact gagggcaacg caccaccgcg tatttccata   540
cccttcatca gcataggaaa tgcgtactgc aacttttatg atgggtggtc acatttctca   600
caagatgggt cctatggcta cacagcgctc aatagaatgg ggaaaatata tattagacat   660
gtaaataagg agacccccac acaggtcatt agtaccgtga ggatgtacat gaaaccaaaa   720
cacattcgcg catgggtgcc cagacccccc cggctgtgca aatacctaca ctcaggcaac   780
atgaacttca acgtggagga cattacagag gagcggaacg atataaacca tgtacccacc   840
cccagccaca gcagtagtgt gcgtgtgcgt cttggcacca ca   882

```
<210> 60
<211> 867
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E17, strain CHHE-29

<400> 60
```

ggtgatgttg aggactcagt aaacagagca gtggttaggg tagcagacac catgccaagt   60
ggaccatcca attcgcaggc agtacctgcc ttgacagccg ctgagacagg tcacacgtct   120
caagtggtgc ctggtgataa catccaaaca cgtcatgtgc acaactacca ctccagaact   180
gaatccagta tcgaaaattt cttcgggcgt tccgcatgtg tagtggtcaa aacatataaa   240
atgggtcaaa aagttgtagc tacagacaga tatgatagtt ggatgatttc cattagggac   300
atggtacaac taagacggaa gtgtgaaatg ttcacgtaca tgagatttga tttagagatc   360
accttcgtgg tcacgagtta ccaacaatat agtacatcct tgacacagga catgccagtg   420
atcacgcatc agttcatgta tgtgccgcct gggggtccgg ttcctgagag tgtaaatagc   480
tacgcttggc aaacgtcaac caatcccagt atattctgga ctgagggtaa tgccccagca   540
aggatgtcca ttcccttcat cagtgttggg aacgcatata gctgcttcta cgatggctgg   600
tcacacttca cacagaaggg ggtttatggt tataacactc tcaacaacat gggcaaattg   660
tacatgcgac acgtgaacaa aaatagcccc acagagatca taagcactct tcgtgtgtat   720
ttcaagccaa agcacgtgaa agcgtgggta cccagaccac ccaggctatg tccatacaaa   780

```
tataaggcaa atgttgactt tgaagtgact ccaatcacag acaagcgaga ctccataacc      840
agcataccag tccccaagca cactcat                                          867
```

```
        <210> 61
        <211> 861
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E18, strain Metcalf


        <400> 61
ggggataacc aggatcggac ggtcgccaac acacagccta gcggtccgtc caactccacg       60
gaaattccag ccttaacagc ggtggaaacg gggcacacct cacaagtgga tcccagtgac      120
actatccaga ccaggcacgt ggtaaacttc cactcacgtt ctgagtccac tatagaaaat      180
ttcatggggc gtgcagcatg tgtgttcatg gatcagtata aaatcaatgg agaagagacg      240
tccactgata ggttcgcagt gtggaccata aacataaggg agatggccca attaagaagg      300
aagtgtgaaa tgttcacgta catgcgtttt gatatcgaga tgacaatggt cattaccagc      360
tgtcaagacc agggaacgat actagatcag gacatgcctg ttttgacgca tcaaattatg      420
tacgtcccac caggggggccc aatcccagcc aaagtagata gttacgagtg gcagacatca      480
acaaacccca gcgtcttctg gacggaaggt aatgcaccac cgcgtatgtc tattccattc      540
attagcgtcg gcaatgctta tagctcattt tacgatggtt ggtcacactt cacacaggac      600
ggtacctatg ggtatacaac ccttaatgca atggggaaac tgtacattag gcatgtgaat      660
aggagcagcc ctcatcagat aaccagcacg atcagagtat acttcaaacc caaacacatc      720
aaggcatggg tgccccgacc accacgattg tgcccgtata taaacaaaag ggacgtaaac      780
tttgtagtca cggagataac agactcaagg acttccatca ctgatacacc acacccagaa      840
catagtgtcc tggcaacgca t                                                861
```

```
        <210> 62
        <211> 879
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E19, strain Burke


        <400> 62
ggagacatcg tggaggctgt ggagggagcc atctcgcgag tggcagatac tgttagtagt       60
gggcccagta actctcaagc agtaccagcc ctcacagcag tcgaaacggg tcacacttct      120
caagtcaatc ctagtgacac catgcagacc agacacgtga caaattacca ctcgcggtca      180
gaatccagca tagaaaattt ccttagccgc tctgcttgtg tgtatatggg cgaatacagc      240
acacaagcat cagatgagac caaaaagtac atgtcatgga ccataagccc aaggaggatg      300
gttcaaatgc gcaggaagtt tgagctcttc acttacctgc gttttgatgt ggagattact      360
tttgtaatca ccagcagaca agtcaaggta gggacacaat taggccaaga tgcccccccg      420
ctaactcacc aagtcatgta tataccccca ggaggcccag tacctgattc agttggtgat      480
tacgcatggc agacttccac taaccctagt atcttttgga ccgaaggtaa tgcatcaccc      540
aggatgtcaa tacccttcat tagcataggt aacgcctata gcaactttta tgacgggtgg      600
tcgcattttc accagaatgg cgtctatgga tacaacacgc tgaaccatat ggggcaactg      660
tacgtgcggc atgttaacgg cccttcacca ttaccagtga caagcacagt cagggtctac      720
tttaaaccca aacacgtgaa ggcttgggta ccgagggcac ccaggctatg tcaatatgta      780
aatgcatcca ctgtgaactt cgagccaaca gacatcactg agtcacgcac tgacatcaac      840
```

catgttccag acaccgtgaa gccagatctc caaacatac   879

<210> 63
<211> 843
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E20, strain JV-1

<400> 63
```
ggggacgtgc acgatgcggt ggttggggcc atgacccgtg ttgcagacac gataagtagt    60
gggccaagca attcagaaag cgtgccagca ttgactgcag ccgagacagg acacacatca   120
caggtagtac cgagtgatac catgcagacc agacatgtgc ggaatttcca cacaagatca   180
gagtcttcaa tagaaaattt catgagtcgc tccgcctgtg tctactatac taagtataag   240
accaaagacc cggacccaac ggagatgtac tctagttgga aggttaccac caggcaagtg   300
gcacaactca ggaggaagat ggagatgttc acttatttgc gctttgacgt agaagtgaca   360
tttgtaataa ctagctcgca agatcagtcc acgagtgttg cacaggacgc acctgttctc   420
actcaccaaa tcatgtacat cccacccgga ggcccggttc ccaaatcagg tagggattac   480
tcatggcaat cctgtactaa cccaagtgtt ttctggactg agggtaatgc accaccacgc   540
atgtgtattc cgttcattag tattggaggg gcatatagtt cattctatga cgggtggtcc   600
cactttaacc aacaaggtcc gtacgggtat aacactctca atgacatggg tcaactgtat   660
tttaggcatg tgaacgaggg tagcccaggg gcggtaacaa gctacatcag aatatacttc   720
aaacctaaac atattagagc atgggtgccc agaccaccta gattgtgtca gtatgagaaa   780
caagggagcg ttgacttcaa ggtgcaggga gtaactgatg ctcgtacctc gctcaccact   840
aca                                                                 843
```

<210> 64
<211> 885
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E21, strain Farina

<400> 64
```
aatgacccag cacaagccgt gttgagtgcg atcggtcgtg tcgctgacac cgtcgctagc    60
gggccatcga attcagagag agttccagtt ctaaccgctg cggagacagg tcatacctca   120
caggtggttc ccagcgatac cattcagacg cgccacgtcg tcaacttcca cacaagatcg   180
gagtcaacaa ttgaaaattt tatgtgtcgc tccgcctgcg tgtacatcgc ccggtacggt   240
actgaaaagc aaggggaaca aatatccaga tacaccaagt ggaagatcac cactaggcag   300
gtggcgcaac tgcgcaggaa gatggagatg ttcacataca tgcgatttga tttggaaatg   360
acatttgtaa tcacaagctc ccagcgtatg tcaacggcat atgattcaga cacaccagcc   420
ctcacccacc aaataatgta cgtgccacct ggggcccgg agccccgtca ttatgaggat   480
ttcgcctggc agacatccac aaatccaagc atattttgga ccgaaggtaa cgcaccacca   540
cgcttatcaa tcccatttat gagtgtggga aatgcctatt gcaattttta tgatgggtgg   600
tctcactttt cacaaagtgg agtgtatggg tttaccacct aaataacat gggacaactg   660
ttcatgcgcc atgtcaataa gtcaacagcg cacccattg atagtgtggt gcgagtttat   720
tttaaaccaa agcatgttaa ggcgtgggtt ccaagacctc cccggttgtg cccatacatc   780
tatgcaagga acgtggattt tgagccacaa ggtgtcactg aatcaagaga aaagataaca   840
ctagataggg atactcacac ccctatgcgc acatgcgggc cgttc                   885
```

```
<210> 65
<211> 882
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E24, strain De Camp

<400> 65
ggagatgtct gtgaggaagt agagagggct attgtcaggg ttgcagatac tgtcggacgc      60
ggtcctgcta acactgagag tgtaccagcg ctgactgcag ttgaaactgg acacacttca     120
caagttgtac ccggggacac catgcaaacc agacatgtta aaaactttca cacgcggtca     180
gaatcatctg tggaaaattt catgtgcaga gcagcgtgtg tgtattatgt ggattaccac     240
acacaaaatg acagtgagga tgaaaaatat gcatcttgga ttatcaacac gagacaggta     300
gcacagctac gcaggaaaat tgagctgttc acatacacta ggtttgatgt cgaaatcaca     360
ttcgtgatca ccaccacaca gcagcaatcc acagctccca accccgacac tcctctgctg     420
acacaccaaa tcatgtatgt gccccccgggt ggcccagtgc caaatagtgc taccgattat     480
tgttggcaat catccacaaa tcccagtata ttctggaccg agggtagcgc accacccaaa     540
atgtcaatac cctttataag tgtgggaaat gcatacagca gttttttatga tgggtggtca     600
catttcactc aaaacggggt gtacgggttc aacactctga acaatatggg caaattatac     660
ttcaggcacg taaatgacaa caccgtaggg ccatatgtga gcaaagcccg catttatttc     720
aaaccaaagc atgtgcgtgc gtgggttccc aaacctccca ggctctgtga atacaacaat     780
cgagccaacg tgaactttga accacgaggg gttaccgatg ccaggtctag tatcacggcc     840
acaaccgaca cgatcactga gagcacaggg atgcaaacga ct                       882
```

```
<210> 66
<211> 876
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E25, strain JV-4

<400> 66
aatgatccag caactgccat agttagatcg gttgagagag tggctgatac catagcaagt      60
ggacccacta actcagagag agtgccagca ctaaccgccg ttgaaacagg tcacacctca     120
caggtagtcc cgagcgacac catgcaaact aggcatgttg tgaaccatca cattagatca     180
gagtcctcta ttgaaaactt cctgagcagg tccgcctgcg tgtacatcga catgtatggg     240
acaaaagaga atggtgacat caagcgcttc accaactgga gaataaacac acgtcaggtc     300
gtgcagctaa ggcgcaagct ggaaatgttt acatacatta gatttgatgt tgaaatcact     360
tttgtaatca ctagcacaca gggaacaccg actcaaaaga acaaggatac cccagttctt     420
acacaccaaa tcatgtatgt gccaccaggg ggcccaatcc ctgtatctta tgaagattat     480
tcttggcaga cctctacaaa tcctagtgtt ttctggacag aagggaatgc cccagcccgt     540
atgtcaattc ccttcatgag cgtagggaac gcctattgta acttttacga cgggtggtca     600
cacttctcac aatcgggtgt gtatgggttc actacactca ataacatggg tcagttgtac     660
tttcgacacg tgaacaagga caccccttgga ccatacaata gcacggttcg ggtttacttc     720
aaacccaaac atgtgaaggc atgggtaccc agaccaccgc gcctgtgcga ctacgtttac     780
gcacataatg ttgacttcac accaaaaggg gttactgaca gcagggacaa gatcaccctg     840
gaccgtgatg aacacgtgcc gtcagtggtt aaccac                              876
```

```
<210> 67
```

```
<211> 870
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E26, strain Coronel

<400> 67
ggagatgatc caccgcattc gatctcaaac acggttgcaa acaccaaccc tagtggtcca       60
accaactcag aaaggatccc agcgctcaca gcagcggaaa ctggtcacac ctcgcaggtg      120
gtcccgagtg ataccgtaca aactcgttgt gtgaaaaact tccacactcg atcggagtca      180
tcaattgaga acttttgtg cagatcagct tgcgcacaca tgtcatcgta tgaggccttc       240
ccaacaacaa cacaagacgg tacacaaagg ttcgccaatt ggacgattag tgtgaaagac      300
atggtgcagt tgaggaggaa atgtgagatg ttcacgtact taagatttga catggaggtg      360
acttttgtga taactagtgt gatcgaaact acaaaaggga aagtaccggc accagcagtc      420
acacaccaag taatgtacat tccaccaggc ggacctattc cagctagcgt tgaaagttat      480
gcctggcaaa catccaccaa cccaagcgtg ttttggacag aagggaatgc tccccacgc       540
atgtctatac catttatcgg cattggtaat gcctacagca tgttctatga cggatgggcc      600
agtttcagac aatcgggtgg atatggatac agcaccctga accacatggg ccagatattc      660
gtaagacacg tgaatgcaac cataccaaac ttgatcagca cagtcaggat atatttcaag      720
cccaagcacg ttagggcttg gattcctaga ccgcccaggg tgtgtcagta catttacaag      780
gcaaatgtag actacgcagt gtcaaatatc actgaaaagc gagatagtat aagatggaca      840
ccaacaaccg gtccgtcaat gacatcccac                                       870
```

```
<210> 68
<211> 855
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E27, strain Bacon

<400> 68
ggtgacgacg caaggactgt tagcgacaca caaaagagcc agccatctaa ctctgagcaa       60
gtgcctgcct taacagcggt tgagactgga cacacctctc aagttgagcc cagtgataca      120
gtacagacac gacatgttgt caactcacac agtaggacag agtcgacaat tgagaatttc      180
tttgggaggg ctgcgtgtgt gagggtgaga gagtactcta tagggcatga tttggcagcg      240
gacgaaacat atgatagctg ggccattaca gtgcgagaca tggtgcagct tcgtaggaag      300
tgtgagatgt tcacatacat gaggtttgac ttggaagtga cgctagtcat caccagctat      360
caagaaccag ggacaatcac cacccaggat atgcccgtcc taacccacca gattatgtat      420
gtgccgccag gagcccggt cccagccaag gctgacagtt acgcgtggca aacgtcaaca       480
aatcccagta tattctggac cgaaggcaac gctccacctc ggatgtctat cccatacatt      540
ggcatcggca atgcatatag cagctttat gacgggtggt cgagcttcaa caactcgggt       600
gtgtatggct acacaaccct gaataacatg ggtaaactgt acttcagaca cgtgaacaaa      660
cacagcccaa acactattaa gagcactgtg aggatatatt tcaagcccaa gcacgtccag      720
gcgtgggtcc caagaccacc gcgcttgtgc ccgtatctga ataagaggga tgtcaacttt      780
gaagtgcaac ccgttacgag caagagagac agtattaact gggtgccaca aacaaaccgc      840
caagtgtaca atcat                                                       855
```

```
<210> 69
<211> 876
```

```
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E29, strain JV-10

<400> 69
aatgaaccta gtagtgccat tgagagagca attgtgcgcg tagcagatac tatggccagt    60
gggcctgcaa actcagagca aatccctgcc ctaaccgctg ctgagactgg tcacacctcg   120
caagtggttc ccagcgacac tatgcaaacc cgccatgtat gtaactacca caccagatct   180
gaatcatcga tcgagaactt cctatgcagg gctgcatgtg tctacatagt gagttacaaa   240
acacagggcg acgaacaaac cgacaaatac gctagttggg agatcaacac gcggcaggtg   300
gcacagttaa ggagaaaatt ggaattcttt acttacataa gatttgacat ggaggtaaca   360
tttgtgatca ctggttcaca agacaccagc acacagacta acacggatac gccagtgcta   420
acccatcaaa ttatgtatgt gcctcccggt ggtccagtac cgacatcagc cacagattac   480
agctggcaga catctacaaa tcccagtgtg ttctggacag aagggaatgc gcctccccgt   540
atgtccatac ccttcatgag cataggcaat gcgtatgcta atttctatga tgggtggtcg   600
cactttagcc agtcaggggt gtatggttac accacactca ataatatggg taccctgtat   660
ttcaggcacg tgaacaactc gaccatcggg ccttacacca gtgcagttag gatatatttc   720
aagccaaagc acgtcaaagc gtgggtgcca cgaccgccac ggttgtgcga ttacaaacac   780
aaaaagaacg tagactttac tcccacaggt gtgaccacaa ctagagacaa gataaccttg   840
gacaagggga ctcacgtgcc gagcgtatgg aacaca                             876

<210> 70
<211> 876
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E30, strain Bastianni

<400> 70
aatgaccccg aaggtgcact taataaagca gtgggcaggg tagctgatac tatagctagt    60
gggcccgtca atacagagca aattcctgca ttgacagcag tggagacagg gcatacatct   120
caagtggtac ctagtgacac aatgcaaacc cgacacgtgg tcaacttcca tactagatca   180
gagtcatcgt tacagaactt catggggaga gcggcatgtg tatatatcgc ccactatgcc   240
acagaaaagg ctaatgatga tttggacaga tacactaact gggagatcac aactaggcag   300
gtggcacagt tgaggcgcaa gttggagatg tttacgtata tgagatttga cctcgagatt   360
acattcgtaa tcaccagctc ccagcgtact tccaacaggt atgcgtcaga ctccccccca   420
ttaacacatc aaataatgta cgtgccgccg gggggtccaa ttcccaaggg ttatgaagac   480
tttgcctggc agacgtccac caacccaagt gtgttttgga ccgaaggtaa cgcccctcct   540
aggatgtcaa taccattcat gagcgttggc aacgcatatt gtaactttta tgatggatgg   600
tcccatttca gtcagagcgg tgtgtacggg tacactacat tgaacaacat ggggcgctta   660
tattttagac atgtaaacaa atcaacagga tacccagtaa atagtgtcgc ccgcgtctat   720
ttcaagccca agcatgtgaa ggcatgggta cctcgcgcgc cacgcttatg tccatatttg   780
tatgctaaaa atgtcaactt tgatgtgcaa ggcgtgaccg agtcccgggg taagatcact   840
ctcgaccgtt cgactcacaa ccccgtgtta accact                             876

<210> 71
<211> 876
<212> DNA
```

<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E30, strain Frater

<400> 71
```
aatgaccctg aaggtgcgct caacaaggcg gtgggcagag tggctgatac aatagccagt    60
gggcccgtca acactgagca aattcccgca ttgacagcag tggaaacagg gcacacatct   120
caagtagtac ctagtgatac aatgcaaact cgacacgtgg tcaacttcca caccagatca   180
gaatcatcgt tggagaactt catgggaaga gcagcgtgtg tgtatatcgc tcattatgct   240
acagagaagg ctaatgatga tttagacaga tacaccaact gggaggtcac aaccaggcag   300
gtagcacagt tgaggcgtaa actggagatg ttcacgtaca tgaggtttga cctcgagatc   360
acatttgtaa tcaccagctc ccagcgcact tcaaccaagt atgcgtcaga ttccccccca   420
ctaacacacc agataatgta tgtaccgccg gggggcccga tccccaaggg ttatgaagat   480
tttgcctggc agacgtccac caacccaagt gtattttgga cggaaggtaa cgcccccccct  540
aggatgtcga taccattcat gagcgttggt aacgcatact gcaacttta cgacggatgg   600
tcccatttca gccagagcgg tgtgtacggg tacactacat tgaacaacat ggggcacttg   660
tatttcagac atgtaaacaa atcaactgca tacccagtta acagtgttgc ccgcgtctac   720
ttcaagccca agcacgtaaa ggcttgggtg cctcgcgcgc cacgcttatg tccatatttg   780
tatgcaaaaa atgtcaattt tgatgtacaa ggtgtgaccg agtctcgggg aaaaatcact   840
cttgatcgat cgactcacaa ccctgtgtca accacg                             876
```

<210> 72
<211> 877
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E30, strain Giles

<400> 72
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gggccggtga actcggaacg catacctgca ctaaccgcag tggagacagg acacacgtct   120
caagtggtgc caagcgacac catgcaaaca aggcacgtag tcaacatgca tacaagatcc   180
gaatccacca tcgaaaattt catgggaagg gctgcttgtg tatacattgc gcaatacgcc   240
actgataagg ccagtgatga tctggacagg tacaccagct gggagatcac tacgagacag   300
gttgcgcaat tgaggagaaa gctggagctg tttacataca tgaggtatga cttagaagtt   360
accttttgtca ttaccagttc ccagcgcact tcgactacat atgcatcaga ctccccgcca   420
ttgacccacc aaattatgta tgtgcctccc ggggggccta ttcccatagg acacgaagac   480
ttcgcctggc agacttcaac aaacccccagt gtcttttgga ctgaaggaaa tgccccacca   540
cgtatgtcca taccattcat gagtgtgggc aatgcctact gcaattttta cgatgggtgg   600
tcacatttta accagagtgg ggtgtatgga tacactacac taaacaacat gggtcgctta   660
tatttcaggc atgtaaacag atctactgcc tacccagtta atagtgttgc acgtgtttac   720
tttaaaccca aacacgtcaa agcctgggtc ccacgagcac cacgattgtg cccatacttg   780
tatgctaaga acgtgaactt taatgtgcaa ggtgtgactg actcccgaga caagataacc   840
gtagaccgaa ccaaccatgt acgtatgcgc accacag                            877
```

<210> 73
<211> 876
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E30, strain PR-17

<400> 73

```
aacgaccccg aacacgtgtt aaacaatgcc gttggcagag tggcagatac aatcgccagc      60
gggccggtga actcggaacg cgtacctgca ctaactgcag tggagacagg gcatacgtct     120
caagtggtgc caagcgatac tatgcaaaca agacacgtag tcaacatgca cacaagatct     180
gaatccacta tcgaaaattt catgggaagg gctgcttgtg tatacatcgc acaatacgct     240
actgacaaag ccagtgacga tttggatagg tacaccagct gggaaatcac cacgagacag     300
gttgcgcaat tgaggagaaa gttggaaatg ttcacataca tgaggtatga cctggaagtc     360
acctttgtta tcaccagttc ccagcgcacc tcgactacat atgcatcaga ttccccacca     420
ttgactcatc agatcatgta cgtgcctccc gggggcccca ttcctatagg atacgaggac     480
ttcgcctggc aaacatcgac taaccctagt gtcttttgga ctgaaggaaa tgccccacca     540
cgcatgtcca ttccatttat gagtgtgggc aatgcctact gcaattttta cgatgggtgg     600
tcacacttta gccagagtgg ggtgtacgga tacactacac taaataatat gggtcgtctg     660
tatttcaggc atgtaaacaa atctactgcg tacccggtta atagtgttgc acgtatttac     720
ttcaaaccca aacatgttaa agcctgggtc ccgcgagcac cacgactgtg cccatatttg     780
tatgcaagga acgtgaactt taatgtgcaa ggtgtgactg actcccgaga aaagataacc     840
atagaccgaa ccaaccatgt gcccatgcgt aacaca                               876
```

<210> 74
<211> 876
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E31, strain Caldwell

<400> 74

```
ggggacacgg aacatgcagt tgagtcagct atctccaggg tagcagatac cattagctca      60
ggtcctagta acactgttgc tataccagcg ctcaccgcgg cagaaacggg ccacacatcg     120
caagtcaccc ccagcgacaa tcttcagacg cgccatgtta agaactatca ctcccgctct     180
gagtcaacta ttgaaaactt cctgtgtaaa tccgcgtgtg tgcatattgc gtcatacaac     240
gcatacggtg atgttggatc agacagtaga tatgatagtt gggagatcaa catcagggaa     300
atggtgcagt taaggaggaa gtgcgaaatg ttcacctatc tcagatttga catggaggtg     360
acatttgtca tcactagcaa gcaagatcaa gggacttcgc tatcacaaga catgccagtg     420
ctaacacatc agatcatgta cgtgccgcca ggcggatccg tgcccactag cgtccagagc     480
tacgcatggc aaacatccac caacccgagc gtgttttgga cagagggcaa tgccccctgct     540
agaatgtcca tcccattcat tagcataggg aatgcataca gcagcttcta cgacgggtgg     600
tcacatttca cccaacaagg tggctatggc tataatacac tgaacaagat gggtaagttg     660
tttgtaaggc atgtgaataa agaaacacca acccatgtga cgagcacgat acgtgtatat     720
tttaaaccaa agcatgttag agcgtgggtg ccaaggccac ctagattgtg cccgtacatc     780
aataaagcgg actgtaactt cgctgttaca ccactcacca aacagcggtt aggaatcaac     840
gatgtcccgc ggcccagcca cacattacat actcat                               876
```

<210> 75
<211> 875
<212> DNA
<213> Enterovirus

<220>

<221> misc_feature
<222> (0)...(0)
<223> E32, strain PR-10

<400> 75
```
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ggaccgagca attcggagcg ggttccagcg ttaacggccg ttgagacagg tcacacagca     120
caggttaccc cgagtgatac aatgcaaact agacatgtac acaacttcca caccagatcg     180
gagtctagca tcgagaactt cctcagtaga gcagcttgtg tgtacatagg gaaatatagt     240
agcaatgcaa caacacaaga tgaacaatac atgtcatgga caattaatac cagacagatg     300
gtgcagctga dacgcaaatt cgaaatgttc acctacctac gcttcgacgt agaagtcact     360
tttataataa catcgcacca agatcaaggg acacagttca accaggatgc gcccgtaatg     420
tgccaccaaa tcatgtatgt gccacctggt ggcccggtgc ctaagagtgt tgatgacttc     480
acatggcaaa cctctactaa ccctagtgtc ttttggtcag aaggcaatgc accaccgaga     540
atgaccattc cattcattag tatagggaac gcctacagca gcttttatga tggctggtca     600
cacttctctc aaaatggggt ttacgggttt aatgcactca ataacatggg taaactgtat     660
gtgagacaag tgaacctaaa agcccctatg ccagtcagca gtacagttag gatctatttc     720
aaacccaagc atatcaaagc ttgggtaccc agaccaccgc gtctatgtaa gtacctgaag     780
tctgggagtg tcaattttga gcccactgat ttgacagaaa aacggaaatc cagaaagtac     840
atcccaaaaa ctttcagacc agatgtgaga accat                               875
```

<210> 76
<211> 843
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E33, strain Toluca-3

<400> 76
```
ggtgatgtgc atgatgcagt tgtgggtgcg atgtcgcgcg tcgctgatac agtagcaagt      60
ggccctgcaa actctgagag cgtgcctgct ctcactgcgg tagaaactgg acacacgtca     120
caggtgacac caagtgatac aatgcagacc agacacgtac acaacttcca cacacggtcc     180
gaatcgtcaa tcgagaactt cttaagccgc tctgcatgtg tctattatgc aacgtacaaa     240
acaacagcca gcagacccga agaccaattc gttaggtggt ccatttcata ccgccaggtg     300
gcccaactgc gcaggaaaat ggaaatgttc acctacctgc gctacgatgt ggaggtcact     360
tttgtgatta caagttctca ggacccatcg accaacgtaa gccaggatgc tcctgtactc     420
acacatcagt taatgtacgt accccccggg ggtccagtgc ccaaaaattc aagagactat     480
gcatggcaaa catccaccaa cccgagtgtg ttctggaccg aggggaacgc accaccaagg     540
atatccatcc cctttatcag tgtgggcaac gcatacagtt gcttttatga tggatggtcc     600
cactactcac agacgggggt gtatggttac aacaccttaa cgacatggg ccaattattt     660
gtcaggcacg tgaatgaggc aagcccgggt gcggtgtcaa gtgtagttag gatttacttc     720
aaacccaaac atgtgaaggc atgggtcccg agaccaccac ggttgtgcca atatgttaac     780
gcagcaacgg tgaacttcac tcctgaaggg gtcactaagg cacgtactga tctcatgaca     840
aca                                                                  843
```

<210> 77
<211> 915
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature

<210> ...

<222> (0)...(0)
<223> E34, strain DN-19

<400> 77
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ggaatagaag aaactattga cacagtgatc accaacgctt tacaactgtc tcagcccaaa    60
ccgcagaaac aactcactgc tcaatccacc gcctcatcca gcggagtcaa ttcacaagaa   120
gtgccagcat tgactgctgt ggagacggga gcttctggtc aagccatacc cagcgacgtg   180
attgagacca gacatgtcgt caattacaaa actagatctg aatcaaccct tgagtcattc   240
tttggtagat cagcatgcgt aaccatactg gaagtagaga acttcaatgc cactaccgaa   300
tcggacaaga aaaagcaatt caccacctgg ccaatcacat acaccaacac agtccagttg   360
cgcaggaaat tggaattctt tacatactcc agatttgatc tggaaatgac ttttgtcata   420
actgagaggt accacacaag taatacagga catgctagaa atcaagtgta ccaaataatg   480
tacataccac cgggtgcgcc aaggcccaca gcacgggatg attacacctg gcaaagttca   540
tccaatccat cagtgtttta cacatatggt agcgcgcctc ccagaatgtc tatcccatat   600
gttggcattg ccaatgcata ctcacacttt tatgacgggt ttgcccgagt cccctgaaa   660
gatgatacaa ctgactccgg tgacacttt tatggattgg tcaccatcaa tgactttgga   720
acattggctg tgagggtggt gaatgagttc aaccctgcaa ggataacatc aaaggtcaga   780
gtttatatga agcccaaaca tgtgaggtgt tggtgtccta ggccaccgcg cgcagtgccc   840
tatcgtggtg aaggggttga tttcaaacaa gattcaatca cgccaataac agcagtcacc   900
aatattaata ccttc                                                    915
```

<210> 78
<211> 936
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> EV68, strain Fermon

<400> 78
```
tcaaaccact tacatggagc agaggcagcc tatcaggtgg agagtatcat caaaacagca    60
actgatactg tgaagagtga gattaacgcc gaacttggtg tggtccctag tctaaatgca   120
gttgaaactg gtgcaacttc caacactgaa ccagaagaag ccatacaaac tcgcacagta   180
ataaatcagc atggtgtgtc ggagacgtta gtggagaatt ttcttggtag ggcagcccta   240
gtgtcaaaga aaagttttga atacaagaat catgcctcat ccagcgcagg gacacacaaa   300
aactttttta aatggacaat taatactaag tcttttgtcc agttaagaag aaagctggaa   360
ttattcacat accttaggtt tgatgctgaa atcaccatac tcacaactgt ggcagtaaat   420
ggtaataatg acagcacata catgggtctc cctgacttga cactccaagc aatgtttgta   480
ccaactggtg ctcttactcc aaaggagcag gattcatttc attggcaatc aggcagtaat   540
gctagtgtgt tctttaaaat ttctgatccc ccagctagaa tgactatacc ttttatgtgc   600
atcaactcag catattcagt tttttatgat ggctttgctg gatttgagaa aaatggtcta   660
tatggaataa acccagctga cactattggc aacttgtgtg tcagaatagt gaatgaacat   720
caaccagttg gtttttacagt gaccgttagg gtttacatga gcctaaaca tataaaagca   780
tgggctccac gaccaccgcg aaccatgcca tacatgagca ttgctaatgc aaattacaaa   840
ggtagagata cagcaccaaa cacacttaat gccataattg gtaatagagc gagtgtcaca   900
actatgcctc acaacatagt aaccaccggt ccgggt                             936
```

<210> 79
<211> 861
<212> DNA
<213> Enterovirus

<220>

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<221> misc_feature
<222> (0)...(0)
<223> EV69, strain Toluca-1

<400> 79
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gaaagcatac cggcacttac tgcggctgag actggccaca catcgcaggt tgtccctagc   120
gacaccatcc agacaagaca tgtgaaaaac taccactcgc gttcagagtc caccatagag   180
aacttcctgt gtagatctgc ctgtgtgtac tacaccacgt acaacactca gggcgagcaa   240
gcacatgata aatacgcaag ttggccaatc acgactagaa aagttgccca actgcgcagg   300
aagctggagt tctttaccta cctgcggttt gatctcgaga tcacgttcgt gatcacgagc   360
gcccagatca catccacgaa ccaaaaccag gatgcccag tactcacaca tcaggtgatg   420
tatgtacccc caggggGggt ggtaccgcgc agtgtggatg actatagttg gcagacttcc   480
accaatccca gcatcttctg gacagaaggg aacgcacctc ctcgtatgtc aataccattc   540
attagtgtgg gcaacgccta cagcagcttt tacgacgggt ggtcacactt tgaacaaacc   600
ggggtatatg gattcaatac ccttaataat atggggactt tgtacgccag gcacgttaac   660
ggtgctagtc ccgggccagt caagagcacc attaggatat atatgaaacc taaacatgtg   720
aaagcgtgga tacctaggcc cccacggttg tgcgactatg tgaaatctgg caacgtcaac   780
tttgaaccaa aaggagtcac cgagagcaga ccatctataa agttagaaaa gacctcaagt   840
gggcacaggc tgacaaccca c                                             861

<210> 80
<211> 7
<212> PRT
<213> Enterovirus

<400> 80
Met Tyr Val Pro Pro Gly Gly
1               5

<210> 81
<211> 7
<212> PRT
<213> Enterovirus

<220>
<223> Xaa(Position 3) = Val or Ile

<223> Xaa(Position 5) =  Pro or Thr

<400> 81
Met Tyr Xaa Pro Xaa Gly Ala
1               5

<210> 82
<211> 7
<212> PRT
<213> Enterovirus

<220>
<223> Xaa(Position 3) = Gln or His

<400> 82
Phe Gly Xaa Gln Ser Gly Ala
1               5
```

```
<210> 83
<211> 7
<212> PRT
<213> Enterovirus

<220>
<223> Xaa (Position 3) = Ala or Val

<400> 83
Thr Ala Xaa Glu Thr Gly His
1               5


<210> 84
<211> 7
<212> PRT
<213> Enterovirus

<220>
<223> Xaa (Position 7) = Ala or Val

<400> 84
Thr Ala Val Glu Thr Gly Xaa
1               5


<210> 85
<211> 7
<212> PRT
<213> Enterovirus

<400> 85
Gln Ala Ala Glu Thr Gly Ala
1               5


<210> 86
<211> 7
<212> PRT
<213> Enterovirus

<220>
<223> Xaa (Position 2) = Phe or Tyr

<223> Xaa (Position 3) = Ile or Val

<223> Xaa (Position 7) = Ala or Gly

<400> 86
Met Xaa Xaa Pro Pro Gly Xaa
1               5
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SEQUENCE LISTING

<110> THE GOVERNMENT OF THE UNITED STATES OF AMERICA AS REPRESENTED
      BY THE SECRETARY OF THE DEPARTMENT OF HEALTH AND HUMAN
      SERVICES CENTERS FOR DISEASE CONTROL AND PREVENTION
      Oberste, M. Steven
      Maher, Kaija
      Kilpatrick, David R.
      Pallansch, Mark A.

<120> TYPING OF HUMAN ENTEROVIRUSES

<130> 68018/PCT

<140> PCT/US00/07828
<141> 2000-03-24

<150> US 60/127,464
<151> 1999-03-31

<160> 86

<170> FastSEQ for Windows Version 3.0

<210> 1
<211> 20
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<400> 1
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<220>
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<222> (1)...(0)
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<221> modified_base
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<221> modified_base
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<223> UNKNOWN

<400> 2
ngcnccdgat tgntgscc   18

<210> 3
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1

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<212> DNA
<213> Artificial Sequence

<220>   ..
<221> modified_base
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<222> (12)...(0)
<223> Inosine

<221> modified_base
<222> (15)...(0)
<223> Inosine

<223> UNKNOWN

<400> 3
gcnccngayt gntgnccraa                                                 20

<210> 4
<211> 20
<212> DNA
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<220>
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<223> Inosine

<221> modified_base
<222> (12)...(0)
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<221> modified_base
<222> (15)...(0)
<223> Inosine

<221> modified_base
<222> (18)...(0)
<223> Inosine

<223> UNKNOWN

<400> 4
atgtaygtnc cnccnggngg                                                 20

<210> 5
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> modified_base
<222> (3)...(0)
<223> Inosine

<221> modified_base
```

2

```
<222> (9)...(0)
<223> Inosine

<221> modified_base
<222> (15)...(0)
<223> Inosine

<223> UNKNOWN

<400> 5
ggngcrttnc cytcngtcca                                      20

<210> 6
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> modified_base
<222> (6)...(0)
<223> Inosine

<221> modified_base
<222> (8)...(0)
<223> Inosine

<221> modified_base
<222> (9)...(0)
<223> Inosine

<221> modified_base
<222> (18)...(0)
<223> Inosine

<223> UNKNOWN

<400> 6
acrtgncnng tytgcatngt                                      20

<210> 7
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<221> modified_base
<222> (3)...(0)
<223> Inosine

<221> modified_base
<222> (15)...(0)
<223> Inosine

<223> UNKNOWN

<400> 7
awnttytayg ayggntgg                                        18

<210> 8
<211> 20
<212> DNA
<213> Artificial Sequence
```

3

SUBSTITUTE SHEET (RULE 26)

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<220>
<221> modified_base
<222> (3)...(0)
<223> Inosine

<221> modified_base
<222> (5)...(0)
<223> Inosine

<221> modified_base
<222> (6)...(0)
<223> Inosine

<221> modified_base
<222> (9)...(0)
<223> Inosine

<223> UNKNOWN

<400> 8
tananngtnc ccatrttrtt                                              20

<210> 9
<211> 20
<212> DNA
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<220>
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<221> modified_base
<222> (15)...(0)
<223> Inosine

<221> modified_base
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<223> UNKNOWN

<400> 9
atgtayrtnc cnmcnggngc                                             20

<210> 10
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> modified_base
<222> (3)...(0)
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<221> modified_base
<222> (6)...(0)
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<221> modified_base
<222> (12)...(0)
<223> Inosine
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4

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<223> Inosine

<223> UNKNOWN

<400> 10
ggnggnggrt cngtnakytt                                              20

<210> 11
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> modified_base
<222> (3)...(0)
<223> Inosine

<221> modified_base
<222> (12)...(0)
<223> Inosine

<221> modified_base
<222> (15)...(0)
<223> Inosine

<223> UNKNOWN

<400> 11
gangaraayc tnatngarac                                              20

<210> 12
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<221> modified_base
<222> (6)...(0)
<223> Inosine

<221> modified_base
<222> (12)...(0)
<223> Inosine

<223> UNKNOWN

<400> 12
cccatnakrt cnatrtccc                                               19

<210> 13
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> modified_base
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<223> Inosine

<221> modified_base
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```

5

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    <223> Inosine

    <221> modified_base
    <222> (12)...(0)
    <223> Inosine

    <223> UNKNOWN

    <400> 13
gtrctyacna nnagrtcyct                                        20

    <210> 14
    <211> 19
    <212> DNA
    <213> Artificial Sequence

    <220>
    <223> UNKNOWN

    <400> 14
tsaarytgtg caargacac                                         19

    <210> 15
    <211> 18
    <212> DNA
    <213> Artificial Sequence

    <220>
    <223> UNKNOWN

    <400> 15
stgyccagat ttcagtgt                                          18

    <210> 16
    <211> 20
    <212> DNA
    <213> Artificial Sequence

    <220>
    <223> UNKNOWN

    <400> 16
ggnacncayr tnathtggga                                        20

    <210> 17
    <211> 20
    <212> DNA
    <213> Artificial Sequence

    <220>
    <221> modified_base
    <222> (4)...(0)
    <223> Inosine

    <221> modified_base
    <222> (9)...(0)
    <223> Inosine

    <221> modified_base
    <222> (15)...(0)
    <223> Inosine

    <223> UNKNOWN
```

6

SUBSTITUTE SHEET (RULE 26)

```
        <400> 17
gccntrttnt grtgnccraa                                                20

            <210> 18
            <211> 20
            <212> DNA
            <213> Artificial Sequence

            <220>
            <221> modified_base
            <222> (3)...(0)
            <223> Inosine

            <221> modified_base
            <222> (6)...(0)
            <223> Inosine

            <221> modified_base
            <222> (12)...(0)
            <223> Inosine

            <221> modified_base
            <222> (15)...(0)
            <223> Inosine

            <223> UNKNOWN

            <400> 18
ggnacncayr tnrtntggga                                                20

            <210> 19
            <211> 20
            <212> DNA
            <213> Artificial Sequence

            <220>
            <221> modified_base
            <222> (3)...(0)
            <223> Inosine

            <221> modified_base
            <222> (6)...(0)
            <223> Inosine

            <221> modified_base
            <222> (9)...(0)
            <223> Inosine

            <221> modified_base
            <222> (15)...(0)
            <223> Inosine

            <223> UNKNOWN

            <400> 19
acngcngyng aracnggnca                                                20

            <210> 20
            <211> 19
            <212> DNA
            <213> Artificial Sequence

            <220>
```

7

SUBSTITUTE SHEET (RULE 26)

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<221> modified_base
<222> (3)...(0)
<223> Inosine

<221> modified_base
<222> (6)...(0)
<223> Inosine

<221> modified_base
<222> (9)...(0)
<223> Inosine

<221> modified_base
<222> (15)...(0)
<223> Inosine

<223> UNKNOWN

<400> 20
acngcngtng aracnggng                                        19

<210> 21
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<221> modified_base
<222> (6)...(0)
<223> Inosine

<221> modified_base
<222> (9)...(0)
<223> Inosine

<221> modified_base
<222> (15)...(0)
<223> Inosine

<223> UNKNOWN

<400> 21
cargcngcng aracnggngc                                       20

<210> 22
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<221> modified_base
<222> (2)...(0)
<223> Inosine

<221> modified_base
<222> (5)...(0)
<223> Inosine

<221> modified_base
<222> (8)...(0)
<223> Inosine

<221> modified_base
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8

<222> (11)...(0)
<223> Inosine

<223> UNKNOWN

<400> 22
cnccnggngg nayrwacat   19

<210> 23
<211> 888
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> CA1, strain Tomkins

<400> 23
```
ggattgggcg attctattga ggctgccatt gacagcatca cacaaaatgc actaaccact     60
gtacaaaata caacacaatc aggacctact cattcaaaag aagttccagc attaacagca    120
gtggaaacag gtgctactag tcaagtagaa ccaggtgact tgattgaaac cagacatgtt    180
ataaacatga gacaaagatc tgaagcatct atcgaatctt tctttggccg atccgcatgt    240
gttgcgatac ttggtttgtc aaacgccaaa ccaactgaca caaacaccaa acaattgttc    300
aaaacatgga gaatatcata tttagaaact caccaactca gaagaaaact tgagttcttt    360
acgtactcaa ggtttgattt ggaaatgacc atagtaatta cagagagggt tttcaatgca    420
gtcaatgtcc cattgcgcaa ttatgtgtac caaataatgt acgttccccc aggtgctcca    480
gaaccacaat catgggatga ttacagctgg caatcttcta ccaacccatc aatattctac    540
accactggaa atgctcctcc cagagtgtca attccatttg ttggaatagg gtctgcatat    600
tcacactttt atgatggttt ctcacagatt cctcttgact caatcagtgc tggagcaagt    660
aataagtatg gttacacttc aatcaatgac tttggtaccc tggcaattag aatagtaaat    720
gaatatgacc cagtgcaagt ggatgcaaag gcccgagtgt atattaaacc caaacatgtt    780
cgcatgtggt gccccagacc accacgggcc atgccttaca agaatagcac agtggatttc    840
gacccatcag caactgtaat gacccaagtc gcagacatca ggacgtat                 888
```

<210> 24
<211> 882
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> CA3, strain Olson

<400> 24
```
ggagatccag tggaagactt aatcgccaat acagttgcta ggactctaga gagaataacc     60
tctccaactc ataatacaac ggcaggcaac accaccgtta gcgagcacag catcggtacc    120
ggttcagtgc ctgcgttgca agctgctgag actggggctt cgtctaacac cacagatgag    180
agtatgatag aaacacggtg tgttgtcaat aggaatggag tgattgagac tagcatcaac    240
catttcttct cccgagcggg gcttgtggga gtgctgaaca tacttgatgg aggcacctca    300
aaaggctttg aagtttggga tatagacatc atgggctttg ttcagcttcg cagaaagcta    360
gagatgttca cctacatgcg gttcaacgct gaattcacct ttgtcgcgac tttgagtgac    420
ggaacaactc cccatataat gttgcaatac atgtatgtgc cccctggagc tcccaaacct    480
caggaaagag attcattcca atggcagact gcaaccaacc catccgtgtt tgcgaaaatg    540
agtgaccctc ctccgcaagt ttcagtacct ttcatgtctc ctgctagcgc ctaccagtgg    600
ttttatgatg ggtacccaac atttgatgat agaccacaga cctctaatcg tccctacgga    660
caatgcccca ataacatgtt gggcacattc gcggtgcgca ttgttagcaa gacgcctgcg    720
gagagagact tgcgcgtccg tgtttacatg aaactgaagc atgtgcgagc atgggtaccg    780
cgacccataa ggtcacagcc ttacgtcttg aagaactacc ccaactatga tggaacccaa    840
atcgtgccca gtgccaaaga tcgagaagac ataaagaaca ca                       882
```

<210> 25

                                  9

```
            <211> 915
            <212> DNA
            <213> Enterovirus

            <220>
            <221> misc_feature
            <222> (0)...(0)
            <223> CA4, strain High Point

            <400> 25
ggtgatgcaa tcgctgatgc tatacaaaac acagttacat ctactataca gagagtcaca        60
accaacactg ttgggcaaga tgcaacagct gctaacacag cacccagctc tcatagtttg       120
aacactggcc tagtccccgc gcttcaagct gctgagacag gagcttcatc cacagccacg       180
gatgggaatt tgattgagac tagatgtgtt gtaaactcca atggtacacg tgaaacccac       240
attgagcatt tcttctctag gtcagggctg gtgggagtta tggaggtaga tgatacgggt       300
actagtggca agggattctc aaactgggac attgacatca tggcgtttgt gcaactgcgc       360
cgtaaactcg aggcatttac atatatgcgg ttcgacgcag agtttacctt tgtcaccaat       420
ttggagaacg ggctcacgaa taatagtgtg atacagtaca tgtatgtacc acctggagcg       480
cctaaacccg atgcccggga atcattccag tggcaaactg caaccaatcc gtcagtcttt       540
caaaaaatgg acagtccgcc acctcaagtt tcagtaccct tcatgtcacc agccagtgcc       600
tatcaatggt tctatgacgg ttaccccacc tttgggcccc actcggagac atctaatcta       660
tcttacgggc aatgtcccaa taatatgctg ggaacattct cggccagggt tgttagcaag       720
caaatcacca atcagaaatt ccagatccgt atttatctac ggctgaagag ggtgagggcg       780
tggatccca gacctttgag atcgcagccg tacatttaca gaaactaccc cacctatggt       840
actaccatcc aatacctggc caaagatagg cgcaagatca ctgaaactga ttataatgct       900
gaacagcgca cgcat                                                        915

            <210> 26
            <211> 885
            <212> DNA
            <213> Enterovirus

            <220>
            <221> misc_feature
            <222> (0)...(0)
            <223> CA5, strain Swartz

            <400> 26
ggcagaccaa ttgcagatat aatagaagga gcagtagctc aaactaccac cagagcacta        60
agtggaccaa ttcagccagt gacagcggcc aacacctctc ccagttcaca tcggcttggt       120
acggggcaag tgccagcttt gcaagcagca gaaacgggag ccacctcgaa tgcgaccgac       180
gagagtttga ttgaaccagt gtgtgtggtc aacagacatg gagtcatgga aactagcatt       240
gaacacttct tttcacgctc aggcttggca ggaattttga taattgagga ctccggtact       300
tccacgaaag gctacgccac ttgggaaatc gatgttatgg gatttgtcca gctgaggcgt       360
aaactagaga tgttcacata catgcgattt gatgcagagt tcaccttttat cacagcagaa       420
aggaatggca acaccagccc aatacccatc cagtacatgt atgtcccacc cggagcccca       480
gtccctactg gtagggagac attccaatgg caaacagcga ccaatccatc cgtgatctca       540
aagatgactg atccaccagc ccaggtgtct gtaccattta tgagcccagc cagtacttat       600
caatggttct acgatggcta ccccacgttc ggagaagttc cagtgactac gaacttgaac       660
tatggacagt gcccaaacaa caaaatgggc actttctgca tccgcatggt ctcaggtgta       720
tctacaggca aggacgtcac tgtgcgcatt ttcatgaagt tgaagcatgt gcgcgcctgg       780
gtgccaaggc ccatcaggag ccagccttac ttgttaaaga attatcccaa ctttgacaag       840
tcaaatattg tagacgcatc atcgaacagg acatatacca ccact                       885

            <210> 27
            <211> 915
            <212> DNA
            <213> Enterovirus

            <220>
            <221> misc_feature
            <222> (0)...(0)
            <223> CA6, strain Gdula
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```
        <400> 27
aatgacccca tttcaaatgc aatagaaaat gctgtgagca cactcgctga caccacgata      60
tcacgtgtta cagcggccaa cactgctgct agctcccatt cccttggtac tggacgcgtg     120
ccggcgttgc aggctgcgga gacaggggca agttccaacg ctagcgatga gaacctgatt     180
gaaactcgtt gtgtgatgaa tagaaatgga gttaacgaag caagtgtaga acacttctac     240
tcccgtgcag ggctagtagg agttgtggag gtgaaagact caggcactag tcaggacggg     300
tacacggtgt ggcccataga tgtgatgggc tttgtgcaac agcggcgcaa gttagagcta     360
tctacttaca tgcgctttga cgctgaattt accttttgtgt ccaatctcaa tgacagcaca     420
acacccggca tgctattgca gtacatgtac gtgccgccgg gtgcgcccaa accagacggt     480
aggaagtcat atcaatggca aacagccacc aacccttcaa tattcgcaaa gttgagtgac     540
ccaccgcccc aagtgtctgt cccattcatg tcaccggcgt cagcctacca gtggttctac     600
gatggttacc ccacgtttgg cgaacacaag caagctacta atttacaata cggtcagtgc     660
cctaacaaca tgatggggca ttttgctatt cggacagtta gtgaatccac caccgggaaa     720
aatgtccatg tccgggtgta catgagaatt aagcacgtaa gagcatgggt gcccagacct     780
ttcagatccc aagcttacat ggtcaaaaac tacccgacat acagccaaac aatatccaat     840
actgcagccg atcgtgcgag cataaccact acggactatg agggtggcgt accagcaaac     900
ccgcagagaa ctttt                                                      915


        <210> 28
        <211> 888
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> CA7, strain AB-IV

        <400> 28
ggagacgaaa tactcgacct aatcgagagt gctgtacaga ataccactaa agccattacc      60
agctcaatcg acaccaaaac tggtgctaac actcaagcta gccaacatcg tataggcttg     120
ggggaggttc ccgctcttca agctgctgag acaggatcgt cttcgctcgt ttcggacaag     180
aacatgatag aaacaaggtg tgtcgtaaac aaacacagca cagaggaaac cagcattaca     240
aacttctact ccagggcggg cctagtgggg gttgtgaaca tgccagtaca aggaaccagc     300
aacacaaagg gtttcgcaaa gtgggggata gatataatgg gctttgtgca gatgaggcgc     360
aaacttgagc tcatgacata catgagattc tccgccgagt ttacgttcgt acccagcact     420
cctggggggag agactactaa ccttatactg caatacatgt atgcacctcc cggagctccg     480
ctgccaacca ggcgggattc atacgaatgg caaacatcca ctaaccccttc tattatcagc     540
aagatggcgg acccacccgc tcaggtatcg gttccattcc tttctcctgc atcagcatat     600
cagtggttct atgatggcta ccccacattt gggaaacacc aatagatca ggacttccaa     660
tatggcatgt gcccaaacaa catgatgggc acattctgtg tgcgcatgat cggtgggggc     720
aaaccgaccc aatcagttac catacgtata tacatgagat taaagcatat ccgtgcatgg     780
gtgccccggc cactgaggag tcagaattac actatgagga attacccgaa ctacaacggg     840
ggcgcaataa aatgtacatc aaaaagcaga gctaccataa caacctta               888


        <210> 29
        <211> 882
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> CA8, strain Donovan

        <400> 29
ggagattcca ttgaagacat aataagcaac actgtcaccc gtacactgca acaaatcagt      60
gccccatcac acgacactac agcagccaac acctcagtga gtaatcataa aattggtacg     120
ggggatgtcc cagctctcca agctgcagag actggcgcta cttccaatgc ctcagacgag     180
aacatgattg agacacgatg tgtgttaaat cgcaatgggg ttgtggaaac tagtttggac     240
catttctttt caagagcagg ccttgtggga gtgatcaatg tgcaagatgg cggcactcag     300
aagggttttg aagtgtggga catagatgtc atgggtttttg ttcaactcag gaggaagttg     360
gagatgttca cgtacatgag gttcaacgcc gagttcacat tcgtatccac actcgcggat     420
```

```
ggcacaactc ccagagtgat gttgcagtac atgtacgttc cacctggtgc ccccaaacct   480
caggagagag attcgtttca gtggcaaact gcaaccaacc catcagtatt ttgcaaaatg   540
agtgaccctc ctccacaggt ttccgttcct ttcatgtcac cagctagtgc ctaccaatgg   600
ttctacgatg ggtacccaac attcgatgat cgaccggcca cctcaaacca cccgtacggt   660
cagtgcccca ataacatgat gggcacattc gcagtgcggt ttgtcagcaa gaccccagcc   720
acacgggatc tgcgtgtcag agtgtacatg cgcctgaaac acgtgcgcgc atgggtaccg   780
agacctatcc gatctcaacc ctatattttg aaaaactacc caaattatga tggcacaaag   840
ataacgtcga catctaagga taggcaaagc atcaaaacaa ca                      882
```

          <210> 30
          <211> 894
          <212> DNA
          <213> Enterovirus

          <220>
          <221> misc_feature
          <222> (0)...(0)
          <223> CA10, strain Kowalik

          <400> 30

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ggcgacccccg tggaggacat catccacgac gctttgagca gcactgtgcg gcgggccata   60
actagtggtc aagatgtcaa cacagcggcc ggtaccgctc ctagctctca caggttggag  120
actggtcgtg ttcccgccct acaagcagca gaaactggag ccacttctaa cgctacagat  180
gagaacatga tagaaacgcg gtgtgtcatg aacagaaatg gagtgttgga ggcgactata  240
agtcatttct tctcacgctc aggtttggtg ggtgttgtca atctaactga cggaggcacc  300
gatacaacgg gatatgcagt gtgggacatt gacatcatgg gttttgtgca actgcggcgg  360
aaatgtgaga tgttcacata catgagattc aacgctgagt tcacattcgt cactacaaca  420
gaaaatggcg aggcaaggcc atttatgtta cagtatatgt atgtacctcc aggtgcccct  480
aagccaacgg gtagagatgc ttttcagtgg caaacagcga caaatccatc cgttttcgtt  540
aagctcacag atccacctgc tcaggtatca gtccccttca tgtcacctgc tagtgcctac  600
caatggttct atgacgggta tccaacattt ggacaacacc cggaaacatc taatacaaca  660
tatggacagt gccctaacaa catgatgggg acctttgctg tgagagtagt gagtagagtg  720
gctagccagc tcaaactaca gacacgagtg tatatgaagc ttaagcatgt gagagcatgg  780
atccctaggc caataagatc ccagccttac ctcctaaaga attttccaaa ttatgatagt  840
agtaagatca catacagcgc aagagatcgt gccagcataa aacaagctaa tatg         894
```

          <210> 31
          <211> 912
          <212> DNA
          <213> Enterovirus

          <220>
          <221> misc_feature
          <222> (0)...(0)
          <223> CA11, strain Belgium-1

          <400> 31

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gggccaatag aagaaatcat ctcaactgtt gccagtaacg cgttggcgct cagtcaaccc   60
aagccagtgg acaactctgt acaaaacacc caacaaagtg ctccagtgca tagccaggag  120
gtgccagcat tgaccgcagt ggagacaggg gcgacaagtg atgtggttcc atctgaccta  180
attcagacta gacacgtatt gaatgttaaa tccaggtctg aatccaccat cgagtcattt  240
tttgcaagag ctgcatgtgt aaccattatg caggtggaca tttcaacgc aacctctgtg  300
gaagacaaaa gaaagttgtt tgctaaatgg gcaatcacct acactgatac cgtccagctg  360
agacggaaat tagagttttt cacttattct agatttgact tagagatgac ttttgtgcta  420
actgagagat actactccca aagctcaggg catgctagat ctcaggtgta ccaaattatg  480
tatgttccac caggggcacc cacgcctagt gcatgggacg actacacatg gcaaacatcc  540
tccaacccat ccattttctt taccaccggc aatgcaccac cgcgcatttc aattccatt  600
gttggaatcg ccaatgcata ctcacacttt tatgatggct ttagtagagt acctttggag  660
ggagaaacaa cagacacagg agacgcttac tacgggctca cttcaataaa cgattttggt  720
acacttgcag tcagggtagt taatgactac aacccagcca gggtggagac aaggattaga  780
gtatacatga agcccaaaca tgtgagagtc tggtgcccgc gacctccaag agcggtaagc  840
tacagaggac ctggagtcga cctcctatca acatcagtaa caccttatc caaacatgac  900
```

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ctagcgacat ac   912

```
        <210> 32
        <211> 888
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> CA12, strain Texas-12

        <400> 32
    ggagatacag tgagtgatat gatcgaaaat tccatcaacc gaattaccag tgcaatttcc       60
    actacccaga cacaccagac agcagctgac actagagtta gtacacacag gttaggcacg      120
    ggggaggtgc cacctttaca agcagcagag acaggtgcca cctccaacgc aaccgacgag      180
    aacatgattg aaacacgctg tgtcgtcaac aggcacgggg tgagcgagac cagcgtggaa      240
    tacttcttct ctcgctctgg tttggcagga atagtcatcg tggaggatgc aactgccact      300
    aataagggtt atgccacatg ggagattgat gtcatggggt tcgcgcaact gcgtcgcaag      360
    ctggagatct tcacatacat gcgcttcgat gcagagttca cttttgtggc aacagaacgc      420
    aatgggagca ccagcccggt catgatgcag tacatgttcg tgcccctgg cgcccctgtt      480
    ccaacaggga gagatacctt ccaatggcaa tctgctacta acccttcagt gctagtaaaa      540
    atgacggatc caccggccca agttgccatc ccctttatgt ctccagctag tgcataccaa      600
    tggttctatg atggatatcc tacctttgga gaaagaccag ttacaaccaa catgaattat      660
    ggacagtgtc ccaacaacaa aatgggaact ttttgtatac gcactgtctc cggtgaagcg      720
    tcagggaaaa acatcactat acgtattttt atgaggttga agcatgtaag agcgtgggtg      780
    cctcgcccaa ttagaagcca gctatatctg cttaaaaatt accccaactt tgataacact      840
    aagatcctca acgcctccca caacagagct tctatcacat caaacaca               888

        <210> 33
        <211> 927
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> CA13, strain Flores

        <400> 33
    gggttggaag atctaataca acaagttgcg tctaacgcat tacaattgtc ccagccaaca       60
    agaccggcac tcccaccagc cgagcagagt gtccccaaca ctaaccaaac aactccagaa      120
    cactccaagg aagtcccagc gttaacggca gttgaaactg gcgccacgaa tcctctagag      180
    cctggcgaca cagttcagac tagacatgtg atacaaacta gaagtagaag tgaaagtaca      240
    gtggagtctt tctttgcgcg aggtgcatgt gtaaccatta tgggagtgga caactataat      300
    gagacattga aaggagacca gaagtctact ctatttacaa cctggaacat cacctacact      360
    gacacagtcc agctacggag aaaactggaa atgttcactt actccaggtt tgacatcgag      420
    tttacttttg tggtgactga acgctactac tcatcaaaca gtgggcatgc tctgaaccaa      480
    gtgtaccaaa ttatgtatgt accacctgga gcaccagtgc caaagaaatg ggatgattac      540
    acctggcaaa cctcttcaaa cccgtccata ttctacactt atgggtcagc accacccagg      600
    atatccatac cctttgtggg tatagcaaac gcttactccc acttctatga tgggtatgcg      660
    acagtgccct gaaaactga caccacagac tcaggagcag cctactatgg agcagtatcc      720
    ataaacgact tcggactgct tgcagttcgc gtcgtcaatg aacataatcc agtcagagta      780
    tcatccaaaa ttagagtgta tatgaaacca aaacatgtca gggtatggtg tcccagacct      840
    ccaagggctg tagagtatta tggaccagga gtggactaca aggcaaacac tttaacaccg      900
    ttgccaataa agaatttgac tacttat                                         927

        <210> 34
        <211> 888
        <212> DNA
        <213> Enterovirus

        <220>
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13

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<221> misc_feature
<222> (0)...(0)
<223> CA14, strain G-14

<400> 34
ggtgacaaag tggcagacat gattgagacc gcagtggaga agaccgtgtc ctcactaact        60
tcccctattc aaaccccac agccgccaac acaaacgtga gtaatcatcg aattgagctg        120
ggggaagtcc cggctttgca agctgctgaa accggcgcga cgtctcttgt gtctgatgaa        180
tacttgatag agactcgttg tgtagtgaat agccatagta cagaggaaac tacagtgggg        240
cacttctttt caagagcggg gttggtggga gtgattgacc tcccattaca gggaacagtc        300
aacacaggag gattcgcctc gtgggatatt gatgtaatgg gatatgttca gatgagaagg        360
aaacttgagc tgttcacata tgcccgcttc gatgcggagt ttaccttcat agcttccacc        420
ccagatggcg aggtgaagcc agtgttctta cagtacatgt tcgtcccccc tggtgcacca        480
aaaccaacag ggcgcaacac ctacgaatgg caaactgcaa caaacccttc tgtgttggtc        540
aagagcacag atcctccagc acaagtctct gtaccgttca tgtcaccagc cagcgcatat        600
cagtggttct atgacgggta cccaacccttt ggaaagcacc tgcctgctga tgactttcag        660
tacggtatga ccccaaataa catgatggga tcgttctgtg ccaggatagt gggggaagga        720
gcgcctagtg tacacttggt tatccgtatc tacatgcgca tgaaacacgt gcgggtgtgg        780
attccacgac ctatgcgcag ccagccatac gttgcgaaga attaccctaa ctacaagggt      · 840
tctgagatca agtgcgcatc atctagtcgt aagtcaatca ccacatta                    888


<210> 35
<211> 912
<212> DNA
<213> Enterovirus


<220>
<221> misc_feature
<222> (0)...(0)
<223> CA15, strain G-9

<400> 35
gggccaatag aggagatcat ctcgaccgtc gccagcaatg cacttgccct cagtcagcct        60
aaaccggtgg ataattctgt acaaaacacc caacagagcg cgcccgtgca cagccaagag        120
gttccagcat taacagcagt agagactgga gcaacaagtg atgtggtgcc agctgatcta        180
gtgcaaacca ggcatgtagt gaatgtcaag tccagatctg agtccactat cgagtcgttc        240
tttgcaagag ctgcctgcgt gactattatg caggttgata actttaatgc caccaccacg        300
gaggacaaga ggaagttatt tgccaaatgg gccatcacat acacagacac agtacaattg        360
aggaggaaat tggaatttttt cacgtactcc aggttcgatc ttgagatgac tttcgtgcta        420
actgaaagat actattctca gagctcggga cacgctagat cgcaggtgta tcaaatcatg        480
tacgtccctc caggagcacc aacaccaaat gcatgggatg attacacgtg gcagacgtct        540
tctaacccat caattttctt caccactggt aacgcacccc cacgggtttc aatcccattt        600
gtgggcattg caaatgctta ctcacacttt tatgatggct tcagcagggt acctttggaa        660
ggagagacca ctgactcagg tgacgcttat tatggcctca cttctatcaa tgactttgga        720
acacttgcag taagagtggt caatgactac aacccagcga gagtggagac aaggatcaga        780
gtctacatga aacctaagca tgtgagagtg tggtgtccac gaccccctag ggctgtgagc        840
tacagaggac ccggtgtgga cctactgtcc acctcagtga cgcccctatc taagcatgaa        900
ttgacaacgt ac                                                            912


<210> 36
<211> 918
<212> DNA
<213> Enterovirus


<220>
<221> misc_feature
<222> (0)...(0)
<223> CA17, strain G-12


<400> 36
ggcattgaag acttgatcca acaggttgca tcgaatgcgc tgcaaatctc acagccgacg        60
cgtccggcac tgcccctctac agaaagtctt cccaacacac aacaatcggc accttcgcat        120
tctcaagagg tcccggcgct gacagcagtt gagacaggcg cgacaaatcc attggagccg        180
```

14

```
tctgacacgg  tacaaacaag  gcatgttatc  cagactagat  ccaggtcaga  gtccacaata    240
gagtccttct  tcgcgcgtgg  tgcatgtgtg  acaatcatga  cagtggaaaa  ttttaacgcg    300
actgaggcgg  cagacaagaa  aaagttgttc  gccacttgga  atattacata  cacagacaca    360
gtgcagctca  gaaggaagtt  ggagatgttc  acttactctc  gatttgacat  tgaatttacc    420
tttgtcacca  cagaaaggta  ctacgccagt  aactcaggcc  atgcgcgtaa  tcaggtttac    480
caactcatgt  atgtaccccc  aggagcccct  gtgccacaac  aatgggatga  ttacacgtgg    540
caaacttcct  ccaacccatc  ggtgttttac  acatacggtg  acgctccagc  gcgcatttcc    600
ataccatttg  tagggatagc  taatgcctat  tcccactttt  atgacggcta  tgcagtggtg    660
ccattgaaag  attccaccca  ggatgctggt  gctgcctatt  atggtgcaac  ctcaattaat    720
gattttggaa  tgttggcggt  gagagtagtc  aacgaattca  acccagccag  aatcacatct    780
aaattgagag  tgtacatgaa  accaaagcat  gttagggtgt  ggtgtcctag  accaccaagg    840
gtggtgccgt  acttcggacc  cggtgttgat  tataaggata  gtttgacacc  gctttctaca    900
aaagcactca  acacttat                                                      918
```

        <210> 37
        <211> 927
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> CA18, strain G-13

        <400> 37

```
ggcttggaag  acctcatcca  acaagtggcc  acgaatgcat  tgagtctgtc  gcagcccaca     60
agacccgcac  ttccaccagc  agaacaaagt  gtgccaaaca  ccagtcagac  caccccagaa    120
cattcaaagg  aagtacccgc  actcactgca  gtggagaccg  gtgcaaccaa  cccattggaa    180
ccaggtgaca  cagtgcaaac  tagacatgtt  gttcaaacaa  gatcaaggag  cgaaagtacg    240
gtggaatctt  tctttgcaag  aggggcgtgt  gtcacgatta  tgggagttga  caattacaat    300
gaaagcttga  ccagtagtca  aaaatccacc  ctattcgcca  cttggaatat  tacatacact    360
gatacagtac  agttgaggag  aaaattggaa  atgttcacct  actccagatt  tgacattgaa    420
tttaccttcg  tagtaactga  acgttactac  tcgtcaaaca  gtggccatgc  cttgaatcag    480
gtgtatcaaa  tcatgtatgt  gccaccaggc  gctccaattc  ctaagaagtg  ggatgattat    540
acctggcaaa  catcatcaaa  cccctcaata  ttctacacct  atggaacagc  accacccaga    600
atttcgatcc  cttttgtggg  cattacaaac  gcgtactcac  atttttatga  cggatatgcg    660
actgtaccac  tcaagacaga  cactacggat  ccgggggcgg  ccttctatgg  agcagtttcc    720
atcaatgact  ttggtttgtt  ggcggtgcga  gttgtcaacg  agcacaaccc  ggtaagagtg    780
tcttcaaaga  taagagtgta  catgaagcct  aaacatgtca  gagtgtggtg  cccacgacca    840
ccacgtgccg  tggagtacta  cggaccaggg  gtagattaca  aggcaaacac  attgacacct    900
ctccctacca  agaacttaac  tacttat                                          927
```

        <210> 38
        <211> 888
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> CA19, strain 8663

        <400> 38

```
ggtattgatg  atatcataga  taatgttgta  accaatgctt  tgaaggtgtc  catgccacaa     60
gttcaagata  cgcaatctag  tggaccagtt  aactcaaaag  aagtacctgc  attaacagct    120
gttgaaacag  gggctactag  tcaagttgac  ccatcagacc  taatagaaac  tagacatgtt    180
attaataacc  gcctcagatc  tgagtgcaca  atagaatcat  tctttgggag  gtcagcatgt    240
gtggccataa  ttgggttatc  taaccaaaaa  cccaccagtg  acaatgcagc  caagctcttt    300
gctacatgga  agattagtta  tcttgatatg  tatcaattga  gaagaaaatt  ggaattcttc    360
acatactcca  gatttgatct  tgagttaacc  tttgtaattt  cagaaagatt  cttcacctca    420
acttcagctg  ctgcaagaga  ttatgtatac  cagatcatgt  acattccccc  aggagcccct    480
atccctcagg  tatgggatga  ttacacatgg  caatcatcca  caaacccctc  aatattctac    540
accacaggaa  atgcatgccc  tagagtgtcc  atcccttttg  ttgggatcgg  tgcagcatac    600
```

                                15

```
tctcacttct atgatggatt ctctttagta cctttcaata ccatcgatgc tggtgcttca      660
aacaggtacg ggtacaccac cataaatgat tttgggacta tggcaatcag gatagttaat      720
gaatacgacc cagtcacaat tgatgcaaaa gtcagggttt acatgaaacc aaagcatatt      780
aaggtgtggt gccccagacc tccacgggca gtagcataca atgggccaac agtgaatttt      840
aatgaaaacc cccatgtaat gacagcagtt gctgatatta gaacttat                   888
```

        <210> 39
        <211> 909
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> CA20, strain IH-35

        <400> 39
```
ggtatcgaag atcttatcac cgaagttgca agcaacgctc tgaagttgtc acaaccaaaa       60
cccagcacac aacagagttt accaaacact agtagctcag aaccaactca ctctcaggaa      120
gcgccggcat tgaccgcagt agaaacagga gcaactagta gcgtagtacc agctgatctg      180
gtccagacgc ggcatgtgat acaaacacgt agccgaagtg agtctacagt tgagtcattc      240
tttgctcggg gggcgtgtgt aacaatcatg tcagtggaaa attacaatga aaccgctatc      300
gcagagtcca aattatttac caagtggaac attacctaca cagacacagt ccagttgaga      360
agaaaactag agatgttcac atactccaga tttgatattg agttcacatt tgtggtgact      420
gagcgttacc actccgcaaa ctcaggtcat gcactaaatc aagtttacca gatcatgtat      480
gttcctccag gtgcaccagt gccacaaaga tgggacgact acacatggca aacgtcatcc      540
aaccectcag tcttttatac ctatggtaca gcaccagcca gaatatcgat tccatatgta      600
ggcatagcca atgcctactc gcattttat gatggcttcg ccaaagtgcc cattgaaggc      660
gagacgtcag atccaggtga tgcatactat ggtgcaacgt ccatcaatga tttcggcatc      720
ttagccatac gtgtggtcaa cgaacacaat ccagtgcaag tttcttccaa gattagagtg      780
tacatgaaac ctaaacatgt gcgcgtttgg tgtcccagac cacctagagc tgttccatac      840
tttggccccg gggttgatta taaaggtgac gccctcacac cactatcacg caaggattta      900
accacctat                                                             909
```

        <210> 40
        <211> 888
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> CA22, strain Chulman

        <400> 40
```
gggattgagg atacaatcga aaaagtggtt ggtgatgctc taagggtctc aatgccacaa       60
gttgccaaca cccagccatc aggacccgta aattctaagg aagttccagc actgacagca      120
gtggaaacag gtgcaaccag tcaagtcacc cctgaagatt tgatcgaaac caggcatgtt      180
attaacaata gactaaqntc tgagtgcact gtggaggcct tctttggaag gtctgcatgt      240
gttgccatcc ttggt  ,gt aaacaaaaag ccagacacca caaatgccaa agacctcttt      300
acaacatgga gga    ta cctgcaaact tatcaactga ggaggaaact cgaactcttc      360
acgtattcta gatti   tt ggaattaacg tttgtcatta cagaaagata ctttcaggg      420
acagcagcca caacca ja ttatgtttac caaataatgt atgtaccacc aggagccccc      480
ataccaaata cctgggacga ctacacctgg cagtcatcta ccaaccectc tgtcttctac      540
accacaggca atgccagccc acgcatgtct ataccctttg ttggtattgg tgccgcctat      600
gctcactttt atgacgggtt cagtgtggta ccattcaatc aaatagatgc aggagcatcc      660
aacaaatatg ctactcatc aatcaaagac tttggtacat tggcagttag aattgttaat      720
gagtttgatc cagtgacaat agaggctaaa gtcagagtgt acatgaaacc aaacatgtc      780
agggtgtggt gtccaagacc acctcgtgca gtaccatatc aaaactcatc agttgatttc      840
gcccaaaacg cagtagcaat gaaccaagta gccacaatta ggacgtat                   888
```

        <210> 41
        <211> 915

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```
         <212> DNA
         <213> Enterovirus

         <220>
         <221> misc_feature
         <222> (0)...(0)
         <223> CA24, strain Joseph

         <400> 41
ggtatcgaag ataccattga cactgtcatt aacaatgccc tacaactatc tcaaccacag      60
ccaaataagc agttgacagc tcagtctacc ccctccacaa gtggagtaaa ctcccaggag     120
gttccagctc tgaccgctgt ggaaaccggt gcctcgggac aagcagtgcc cagtgatgtg     180
attgagacca gacacgtggt taattataag acccgatctg aatctactct tgagtctttc     240
tttggaaggt cagcttgtgt caccataatt gaggtcgaga acttcaatgc cactagtgaa     300
gcagacaaga ggaaacagtt caccacttgg ccaatcacat acaccaatac cgtgcaattg     360
cgcaggaaac tagaattctt cacttactcc aggtttgacc tagagatgac ctttgtagtg     420
acagaaagat attatgccag caacacaggt cacgccagaa accaagtgta tcaaataatg     480
tacattcctc ctggtgcacc acaacccaca gcatgggatg attacacgtg gcaaagctct     540
tcgaatccgt cagtctttta cacttatggg agtgctccac caggatgtc tataccgtat      600
gtcggtatcg caaatgcata ctctcttttt tatgatgggt ttgcacgagt accactgaag     ·660
gacgaaacag cggactcagg tgatactttt tacgggctag tcaccatcaa tgatttttgga    720
accttagcaa taagagtagt gaatgaattt aacccagcta ggattacatc aaaaattaga     780
gtgtatatga aaccaaagca tgtaagatgc tggtgcccta gaccaccacg tgcagtgcca     840
taccgtggtg aaggagtaga tttttaattca agttcaatca caccactaac agcagtcgca     900
aacatcaaca cattc                                                     915

         <210> 42
         <211> 852
         <212> DNA
         <213> Enterovirus

         <220>
         <221> misc_feature
         <222> (0)...(0)
         <223> CB2, strain Ohio-1

         <400> 42
agcccagtgg aggaatccat tgagagaagc attggcagag ttgctgacac cattggtagt      60
ggaccatcca attcggaggc aataccggca ctcacagcag tagaaacagg acacacatca     120
caggttacac ctagtgacac gatgcaaaca agacatgtgc acaactacca ttcaaggtcc     180
gaatccagcg tagagaactt cctggcacgc tcggcttgtg tgttttatac aacatacacc     240
aacggtaaaa aaaaaaatgc cgccaaagag aagaagtttg caacgtggaa agtgagtgtt     300
agacaagccg cccaactaag aagaaagcta gagttattca catacttacg ctgtgacatc     360
gaattaacat tcgtcatcac cagtgcacaa gatccatcga ccgctaccaa cttggatgtg     420
ccagtgttga cccatcaaat aatgtacgtc ccacctggtg gtccagtccc tgaaaccgtg     480
gacgattaca actggcaaac atctacaaat cccagccttt tttggactga agggaatgca     540
cctccacgca tgtcaattcc attcatgagc ataggcaatg cctatagtat gttctatgat     600
ggttggtccg agtttaggca tgacggtgtg tacggcctga ataccccttaa caatatgggc     660
acaatatatg ctaggcacgt caacgctgac aacccaggta gcatcaccag cacagtgaga     720
atatacttca aacccaaaca tgtcaaggca tggattcctc gcccgcctcg tttggcacag     780
tatcttaaag ccaataatgt gaattttgag atcaccgatg tgacagaaaa gagagatagt     840
ctcacgacca cg                                                        852

         <210> 43
         <211> 846
         <212> DNA
         <213> Enterovirus

         <220>
         <221> misc_feature
         <222> (0)...(0)
         <223> CB6, strain Schmitt
```

17

```
        <400> 43
agcccagtgg aggggcgccat agagagagcc attgcacggg tcgctgacac tatgccaagt        60
ggcccaacca attcagaagc agtgcctgcc ctgacagcag tggaaacggg ccacacctcc       120
caagtcgtcc ccagtgataa catgcaaacc aggcacgtga agaagtacca ttcacgctcc       180
gaaaccagcg tcgagaactt tctgtgtagg tctgcatgtg tatattttac cacatataag       240
aaccagacag gggcgaaaaa tagatttgct tcttgggtaa tcaccacaag acaagtggcc       300
cagctcagga gaaaactaga aatgtttacg tacttgcgtt cgacattga actcaccttt       360
gtcattacaa gtgcgcaaga ccaatccact atttcccaag acgcccctgt gcagacacat       420
cagataatgt acgtgccacc gggaggccca gtgccaacca aagttgacga gtatgtgtgg       480
caaacatcca ccaaccccag cgtcttttgg accgagggta acgctccacc acgtatgtca       540
gttccctta tgagtatcgg taatgcttat agcacatttt atgacgggtg gtctgatttt       600
tcaaacaaag gaatatatgg gttgaacacc ttgaacaaca tgggaacatt gtacatccgc       660
cacgttaacg ggcccaaccc agtaccaatt accagcacag tgaggatata ctttaagccc       720
aagcatgtta aggcctgggt gcctaggcct ccaaggcttt gccagtacaa aacgtttagg       780
caagtcaact ttacagtgac tggagtgacc gagagtaggg caaatataac caccatgaat       840
actaca                                                                   846


        <210> 44
        <211> 852
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E1, strain Farouk

        <400> 44
ggtgatgtgc agaatgctgt cgaaggggct atggtcaggg tggcagatac agtgcaaact        60
tcagccacaa actcagagag ggtgcctaac ttgacagcag tagaaactgg tcacacttcg       120
caggtagtac ctggtgatac catgcagact agacatgtga tcaacaatca cgtgaggtca       180
gaatctacaa ttgagaactt ccttgccaga tcagcgtgtg ttttcttcct agagtacaag       240
acagggacca aagaggattc caatagcttc aacaattggg tgattacaac caggcgagtg       300
gctcaactac gtagaaaact ggaaatgttt acttacctac ggtttgacat ggaaatcacc       360
gtggtcatta caagctcgca agatcagtct acatcacaaa accagaatgc accagtgcta       420
acacaccaga taatgtatgt accaccaggg ggacccatac ccataagcgt ggatgattac       480
agctggcaaa catccaccaa ccccagtatc ttttggaccg aagggaacgc tccggcacgc       540
atgtcaattc catttattag cataggcaat gcgtatagta atttctacga tgggtggtct       600
cacttctccc agactggcgt gtatggcttc actactctga caacatggg tcaattgttc       660
ttccggcacg taaacaagcc caacccagcc gctattacaa gtgtggcgcg catttacttc       720
aaaccgaaac atgtacgcgc ttgggtgcct agaccaccgc gcttgtgtcc atacatcaat       780
agcacgaatg tcaactttga acccaagcca gtgactgaag tacgtaccaa cataataaca       840
acgggtgcct tc                                                            852


        <210> 45
        <211> 882
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E2, strain Cornelis

        <400> 45
ggagatgagg tgaagcatga acccacagtg gccaacacaa cagcaagtgg accatcaaat        60
tcacaacaag taccggcact cacagcagtg gagactgggc acacctcaca ggtggttcca       120
agcgatacca tacaaaccag acatgttcac aattaccata gtagaactga atccaccctg       180
gagaacttcc tcggaagatc agcatgcgtg cacattgact cgtataagac caagggagtg       240
accggcgaga gcacccggta cgcatcatgg gagatcacca ctcgcgagat ggtgcagctg       300
cggaggaagt gtgaactctt cacctacatg cgatatgatc tagaaatcac gtttgtgatt       360
acaagtcgcc aggagcaagg ggccaaactg tcgcagaaca tgccagtatt aacacatcag       420
atcatgtatg tcccaccggg cgggcctata ccaaccagca acgagagtta cgcttggcaa       480
```

```
acgtcaacga acccaagcgt gttttggaca gaaggaagct cgccaccacg aatgtcaata    540
ccgtttgtta gcataggaaa cgcatacagc aatttctatg atgggtggtc gcacttctca    600
caaaacggtg cgtatggtta cacggcacta aacaagatgg gtaggatatt cgtgcgccat    660
gtaaacaaag agacaccact gcaagtcata agcacaatac ggatgtatat gaagcccaaa    720
cacgtgcggg cttgggtgcc aagaccacca cgcctgtgtc catacctgcg ggcgggtgat    780
ataaactttg aagtgactga tgttacagaa aaacgaaata acatcaatta tgtcccaacc    840
ccatcccaca gcagcagtgt gcacatgcgc ttgaacaacc at                       882
```

```
        <210> 46
        <211> 879
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E3, strain Morrisey

        <400> 46
ggggacgtcg aagaggcaat tgatagggca gttgcgaggg tggctgacac aatgccaacc     60
ggtccacgaa acactgagag cgtgcctgcc ctgacagcag tagagacagg ccacacctca    120
caggtcgttc ctggtgacac aatgcagacg aggcatgtta agaactatca ctccaggaca    180
gagtcatcaa ttgaaaactt cctgtgcagg gctgcgtgcg tgtatataac aacatacaaa    240
tcagctggtg gaacacccac agagcgatat gcaagttgga ggataaacac caggcaaatg    300
gtgcagctca ggaggaaatt tgagctcttc acatacttgc gctttgacat ggaaatcaca    360
tttgtgatca caagcacaca agatcctggg acacaattgg cacaagatat gcctgtacta    420
actcatcagc tcatgtatat cccacctggg ggccctgttc ctaacagtgc cacagatttt    480
gcatggcaat catcaactaa tccaagtata ttttggacgg aaggctgtgc tccagcacga    540
atgtcggtgc cgttcatcag cattggcaat gcctacacca atttttacga tgggtggtcg    600
catttcaccc aagaaggggt ttatgggttt aactcactga acaacatggg ccacatatat    660
gtgaggcacg tcaatgagca aagcctgggt gtctcgacca gcaccgttcg cgtgtatttt    720
aaacccaaac atgtgcgtgc ttgggtacca agaccaccca gactgtgccc atacactaag    780
agttcaaatg tgaatttcaa accgaccgct gtcactgatg agcgaaagga tatcaacgat    840
gtaggcaccc ttcgaccaac agtgtacact aaccttgtg                           879
```

```
        <210> 47
        <211> 843
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E4, strain Pesacek

        <400> 47
ggagacgtgc aagatgcagt gacaggtgct atagtacgtg tcgctgacac tctcccaaca     60
ggtccctcaa ataatgaagc tatacccaat ttaacagcag tggagactgg ccatacctcg    120
caagtgacac caggcgacac aatgcaaaca cgccatgtgg tgaacatgca cacccgctct    180
gagtcgtcca tcgagaattt cctggcacgt tcagcatgcg tgtactacct tgattaccaa    240
acgggagaag ggcccggcga tcagtatttt ggccagtgga ccattaccac gaggagggtt    300
gcgcaattgc gtcgaaagct ggagatgttc acttatctaa gatttgacat ggaaatcaca    360
atcgtgatta ctagttcaca ggatcaatct accatctcga acccagatac accagttttg    420
acgcaccaaa ttatgtatgt accaccagga ggaccaatcc cagcaaaagt cgatgattac    480
agttggcaaa catccacgaa tcccagcgta ttctggactg aagggaatgc gcctgcccgr    540
atatccatcc cattcattag cgttggaaat gcatacagta gcttttatga cgggtggtcg    600
aacttctcac aaaacgggcg gtatggctac aataccctca acaacatggg acaattgttc    660
tttaggcacg ttaacaaacc cagccctaat actgtcacaa gcgtcgcccg catatacttc    720
aagcctaagc acgtgagagc ttggatcccg cgaccaccgc ggttgtgtcc atacataaat    780
gcgggagacg tgaacttcac tccgacacca gtgactgaaa agcgaaagga cctaataacc    840
acg                                                                 843
```

```
        <210> 48
```

19

```
    <211> 843
    <212> DNA
    <213> Enterovirus

    <220>
    <221> misc_feature
    <222> (0)...(0)
    <223> E4, strain DuToit

    <400> 48
ggagatgtgc aggacgcagt ggctggggcc atagtgcgtg tggctaatac tctcccatca    60
ggcccctcaa acaatgaggc tatacccaac ttaacagccg tagaaactgg acacacctcg   120
caggtgacac cgggtgatac aatgcagacg cgccacgtag tgaacatgca cactcgttct   180
gagtcgtcaa tcgagaactt cctggcgcgg tcagcatgtg tatactacct cgattaccga   240
acaggaacgg ggcctggcaa tcaatacttt agccagtgga ctattaccac aagacgagtt   300
gcgcagctgc gtcgaaaatt ggagatgttc acctatctaa ggttcgacat ggagatcacg   360
attgtaataa cgagttcaca agatcagcct accgtccgaa acccagacac accggtcttg   420
acacaccaaa tcatgtatgt gccaccagga gggccaatcc cagcaaaggt cgacgattac   480
tgttggcaaa catccacaaa ccccagtgtc ttctggactg aagggaacgc accagcccgg   540
atatccatcc cgttcatcag tgtcgggaat gcatatagta gtttctacga tggatggtca   600
aatttctcgc aaaatgggcg gtatggctac aacaccctga caacatggg gcaattgttt    660
ttcaggcatg tcaataaacc cagtcccaac actgtcacaa gtgttgcccg catatacttc   720
aagcccaaac acgtgaaggc atgggtcccg cgaccaccgc gattgtgccc ttacattaat   780
gctggagatg taaatttcac ccccacatcg gtcactgaga agcgagcgag cctgataacc   840
aca                                                                 843

    <210> 49
    <211> 843
    <212> DNA
    <213> Enterovirus

    <220>
    <221> misc_feature
    <222> (0)...(0)
    <223> E4, strain Shropshire

    <400> 49
ggggacgtgc aagatgccgt gactggagcc atagtgcgtg tcgccgacac actgcacacg    60
ggaccctcga acaacgaagc aatacccaat ttgacggccg tggaaacagg gcatacatcg   120
caagtgacac caggcgatac aatgcagacg cgtcacgtgg tcaacatgca cacccgttca   180
gagtcatcaa ttgagaactt cctagctcga tctgcgtgtg tgtattacct cgactatcaa   240
acagggtcag gacctggcac ccaatacttc ggccagtgga ccatctccac aaggagagtt   300
gcgcaactgc gccggaagtt ggaaatgttc acctacctaa gatttgacat ggaaataaca   360
atcgtgatca ccagttcgca agatcactcc accatctcaa atccagatac accaatcatg   420
acgcaccaaa ttatgtacgt accaccaggg ggtccaatcc cggcgaaggt cgacgactat   480
agctggcaaa catctacaaa ccctagtgta ttttggacag aagggaacgc acccgcccgc   540
atatccattc cattcattag tgtcggaaat gcctatagca gcttctacga cgggtggtca   600
aatttctcgc aaaacggccg atatggatac aacactttga caacatggg acaactattc    660
ttcagacacg tgaataagcc cagccccaac accttcacaa gtgttgcccg tgtatacttc   720
aagccaaaac acgtgaaggc gtggattcca cgaccaccgc gattatgtcc atacataaat   780
gcgggagacg tgaatttcaa accaacaccc gtgaccgaaa agagggcgag cttaatcacc   840
aca                                                                 843

    <210> 50
    <211> 876
    <212> DNA
    <213> Enterovirus

    <220>
    <221> misc_feature
    <222> (0)...(0)
    <223> E5, strain Noyce
```

```
        <400> 50
ggagactcag agcacgcagt ggaaagcgcc gtatctaggg tggcagatac aattatgagt      60
ggcccgtcaa actcccaaca ggtccccgct cttactgcag ttgaaactgg acacacatcg     120
caagttgttc caagtgatac catccaaacc agacatgtgc agaatttcca ctctaggtcc     180
gagtcgacca ttgaaaattt cctgagtagg tcagcatgtg tgcatatcgc caattacaac     240
gcgaagggcg ataagacgga tgtggacagg tttgacaggt gggagatcaa cattcgtgaa     300
atggtgcaac tacgtaaaaa gtgtgagatg ttcacatatc tacgctatga tattgaagtt     360
acatttgtta taaccagcaa acaggatcag ggccccaaac taaaccagga tatgcctgtt     420
cttacccacc aaattatgta cgtaccccca ggaggttcag tacctagcac cgttgagagc     480
tatgcgtggc aaacatcaac aaaccctagc gtgtttggga ccgaggggaa cgctccagct     540
agaatgtcca tacctttat cagcataggg aacgcttata gtagcttcta tgatggatgg     600
tcacacttta ctcaaaaagg ggtctacgga tacaacacat taaacaagat ggggcagcta     660
tttgtcagac atgtgaacaa acagacccccc acgccagtta ctagtaccat aagggtttac     720
ttcaaaccaa agcacattag agcttgggtc cctaggcccc cgcggttatg ccccctatgtg     780
aacaagacaa atgtaaactt catcaccaca caggtaacag aacctacaaa tgacctcaat     840
gacgtgccca agtctgagca taacatgcac acatat                               876
```

```
        <210> 51
        <211> 867
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E6, strain D'Amori

        <400> 51
aacgacgttc agaacgcggt ggaacggtca attgttcgtg tagcggacac attacccagt      60
gggccaagca actcagaaag cataccagca ctcacagcag ccgagactgg acatacctcg     120
caggtcgtcc ccagcgacac catccagacg cgacatgtga ggaattttca cgttcggtct     180
gagtcatcgg tagagaattt tcttagcagg tcagcttgcg tgtacatcgt ggagtacaaa     240
acccgggaca cgactcccga caagatgtat gatagctgga ttatcaatac caaacaagtg     300
gcgcagttga gaaggaagct ggagttcttt acctatgtca gattcgacgt ggaagttacc     360
tttgtcataa ccagcgtgca agatgactcc acaaaacgga acaccgacac cccagtgcta     420
actcatcaaa ttatgtatgt gccgccagga gggcccatac cacaagcggt ggacgattat     480
aactggcaaa cttccaccaa ccccagcgta ttttggactg aggggaacgc gccaccaagg     540
atgtctattc cgttcatgag tgttggcaat gcatacagta acttctacga cgggtggtcc     600
cacttttctc aaactggggt ttacgggttt aacaccctaa acaacatggg taagttatat     660
ttcaggcatg taaacgacag gactattagc ccaatcaaaa gtaaggtcag aatatatttc     720
aaacccaaac acgtgaaggc atgggtaccc agaccgccga gattgtgtga atacacccac     780
aaggataacg tggactatga accaaagggg gtcacaacat cacgcacttc aatcaccatc     840
accaactcca cacacatgga gacgcac                                        867
```

```
        <210> 52
        <211> 867
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E6, strain Cox

        <400> 52
aatgacgttc aaaatgcagt cgagcaatca attgttcgtg tggctgacac gttacccagt      60
ggacccagta attcagagag cataccggca ctgacggccg ccgagactgg ccatacttct     120
caagttgtgc ccagtgatac tatacagaca cgccacgtaa aaaactttca tgtgaggtcg     180
gagtcgtcag tagagaactt tctcagtagg tccgcttgcg tgtatatagt gggatacaag     240
accacagatg cgaccccctga caaaatgtat gacagctggg ttatcaacac aaggcaggtg     300
gcgcagctaa ggagaaaatt agagttcttc acctatgtta ggtttgatgt tgaggtcacc     360
tttgtgataa caagcgtgca agacgattca actagacgga acacagacac ccccgttcta     420
```

```
acccaccaaa tcatgtacgt acccccaggt gggcccatcc cgcaggcagt ggacgactac    480
aattggcaaa cttccacaaa tcccagtgta ttttggacag aagggaatgc cccaccaaga    540
atgtccatac cattcatgag cgtaggtaac gcatacagca atttctatga tgggtggtct    600
cacttctctc aaactggggt gtacggtttc aacaccctga acaacatggg caagctatac    660
ttcaggcatg tgaacggcaa acaataagc cctatcgcaa gcaaggttag gatttacttc     720
aaaccaaagc atgtgaaggc atgggtgccc agaccaccgc gattgtgtga atacacccac    780
aaggacaatg tggattacga accaaaggga gtcacaacat cccgtacatc tatcacaatt    840
agcaattcca ctcatatgga aacatat                                        867
```

        <210> 53
        <211> 867
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E6, strain Burgess

        <400> 53

```
aacgacgttc agaacgcggt ggaacggtca attgttcgtg tagcggacac attacccagt     60
gggccaagca actcagaaag cataccagca ctcacagcag ctgagactgg acatacctcg    120
caggtcgtcc ccagcgacac catccagacg cgacatgtga agaattttca cgttcggtct    180
gagtcatcgg tagagaattt tcttagcagg tcagcttgcg tgtacatcgt ggagtacaaa    240
acccatgaca cgactcccga cgagatgtat gatagctgga ttatcaatac cagacaagtg    300
gcgcagttga gaaggaagct ggagttcttt acctatgtca gattcgacgt ggaagttacc    360
tttgtcataa ccagcgtgca agatgactcc acaagacaga acaccgacac cccagtgcta    420
actcatcaaa ttatgtatgt gccgccagga gggcccatac cacagcggt ggacgattat     480
aactggcaaa cttccaccaa ccccagcgta ttttggactg aggggaacgc gccaccaagg    540
atgtctattc cgttcctgag tgttggcaat gcatacagca acttctacga cgggtggtcc    600
cactttctc aaactggggt ttacgggttt aacaccctaa acaacatggg taagttatat    660
ttcaggcatg taaacgacag gactattagc ccaatcacaa gcaaggtcag aatatatttc    720
aaacccaaac acgtgaaggc atgggtaccc agaccgccga gattgtgtga gtacacccac    780
aaggataacg tggactatga accaaagggg gtcacaacat cacgcacttc aatcaccatc    840
accaactcca cacacatgga gacgcac                                        867
```

        <210> 54
        <211> 876
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E7, strain Wallace

        <400> 54

```
ggcgacaccg aaacggctat tgacaatgca atcgccaggg tagcagatac ggtggcgagc     60
ggtcctagta attcgaccag tatcccagca ctcacagcag ttgagacagg tcacacgtca    120
caagtcgagc ccagcgatac agtgcaaact agacatgtca aaaactacca ctcgcgttct    180
gagtcaaccg tggaaaactt tctaagtcgc tccgcttgtg tgtacatcga agagtactac    240
accaaggacc aagacaatgt taataggtac atgtcgtgga caataaatgc cagaagaatg    300
gtgcaattga ggagaaagtt tgagctgttt acatacatga gatttgatat ggaaatcacg    360
tttgtaatca caagtagaca actacctggg actagcatag cacaagatat gccgccactc    420
acccaccaga tcatgtacat accaccaggt ggcccggtac caaacagcgt aacagatttt    480
gcgtggcaga catcaacaaa ccccagtatt ttctggacag aaggaaacgc gccacctcgc    540
atgtctattc cattcatcag tattggcaat gcatatagca acttctatga cgggtggtca    600
cactttccc aaaacggtgt gtacggatac aacgccctga acaacatggg caagctgtac    660
gcacgtcatg ttaacaagga cacaccatac cagatgtcaa gcacaatccg agtgtatttc    720
aaacccaagc acatccgagt atgggtccca cggccgcctc gactgagccc gtacatcaaa    780
tcaagtaatg taaattttaa ccccacgaac ctgacggacg agcggtcatc catcacatat    840
gtgcccgaca ctatacgtcc agatgtgcgc accaac                              876
```

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```
           <210> 55
           <211> 843
           <212> DNA
           <213> Enterovirus

           <220>
           <221> misc_feature
           <222> (0)...(0)
           <223> E8, strain Bryson

           <400> 55
ggtgatgtcc agaatgcagt tgaggggca atggttagag ttgcagatac cgtgagcact        60
agcgccacca actccgaaca agtgccgaac ctgaccgcgg tggagaccgg tcacacatcg       120
caggtagtgc ccggcgacac tatgcagacc aggcacgtag tgaacaagca tgtgcgatct       180
gaatctacaa ttgaaaattt cctcgcacgt tcagcctgtg tgtactttct tgagtacaag       240
actggtacca agactgactc caacgccttc agcaattggg tcatcacaac gcgcaaggtt       300
gcgcagctga ggcgcaagtt ggagatgttt acatacttaa ggtttgatat ggagattact       360
gtggtcatta ctagctccca agaccagtcc acatcacaaa atcaaaatgc gcccgtcctg       420
actcaccaga ttatgtatgt accacctggt ggcccagtgc ccactagcgt tgatgattat       480
tgctggcaaa catccacaaa cccaagcata ttttggacgg aaggaaacgc acctgccaga       540
atgtccatcc cctttatcag cattggaaat gcttatagca actttttatga tgggtggtca      600
catttctcac agaacggagt ctatggtttt accaccttaa acaacatggg ccagctgttt       660
tttaggcatg ttaacaagcc taacccggcg acaataacca gtgtggcccg catttacttc       720
aagccaaaac atgtgagggc ctgggtgcct agaccgccac ggttgtgccc ttacatcaac       780
agtagcaacg tgaacttcga cccaaaacct gtggcagagg tcaggtctag catcatcacc       840
acc                                                                     843

           <210> 56
           <211> 876
           <212> DNA
           <213> Enterovirus

           <220>
           <221> misc_feature
           <222> (0)...(0)
           <223> E11, strain Silva

           <400> 56
ggtgatgtgg ttgaagccat tgagggcgca gttgctagag tagcagacac tatcagcagc        60
ggcccaacaa attctcaagc agtcccagca ctcacagcgg tggagactgg acacacctcg       120
caagttgtac caggtgatac catgcagacc agacacgtaa agaattacca ctcacgatca       180
gaatcgacca ttgaaaattt tctgagtagg gcggcttgtg tctacatggg tgagtattac       240
actacaaata cagatgagac caagagattt gctaattgga caatcagcgc aaggcgcatg       300
gtacaaatga ggaggaagct tgaaatgttc acgtacgtcc gtttcgacgt ggaggtgaca       360
ttcgtaatta ccagcaaaca ggaccaaggg aatcggttgg acaagatat gccccccgctc       420
acacaccaga taatgtacat cccgccaggt ggtcgtatac ccaaatccac cacagattac       480
gcatggcaaa cgtcgacaaa ccccagcatc ttttggacgg agggtaacgc gccccccagg       540
atgtccattc ctttcatgag cattggaaac gcatatagca atttttatga cggttggtct       600
cacttctctc aaaatggcgt gtacggatat aacacactaa accacatggg tcaattatac       660
atgcgccatg taaatggacg atcacctctt ccaatgacca gcacggtgag ggtgtacttc       720
aaacccaaac atgtgaaaac atgggtgcca cgaccccaa gattgtgcca atacaaaaac       780
gcctcgacag taaactttc acccacaaac atcacagaca agaggatag catcacttac       840
attccagaca ccgtgaaacc cgacatgaca acatat                                876

           <210> 57
           <211> 861
           <212> DNA
           <213> Enterovirus

           <220>
           <221> misc_feature
           <222> (0)...(0)
           <223> E13, strain Del Carmen
```

23

<400> 57
```
ggggatgaga gtgcaaaggc tacagtttcc aacacacagc ctagcggtcc aagtaattct      60
gtcagcgtgc caatgcttac tgctgctgag accgggcaca catctcaagc agtacccagt     120
gacactatac agaccaggtg cgtagtgaac caacacaagc ggtcggaatc atccgtggaa     180
aatttcctgt gtcgctccgc ttgcgtatac tacacaacct atgacactca cggggatgca     240
gccgacgcaa agtacgccag ttggacgata accacccgaa aagctgcaca gctgcggaga     300
aaactagaga tgttcacata cttgaggttt gatttagaag tgacattcgt tataacaagt     360
gcacaagtaa catctaccaa taaacgtcag gacacgcctg ttctcacgca tcaagtcatg     420
tacgtgccac caggtggtgc agtacccgct agtgtggacg attatgcgtg gcagacgtcc     480
acaaacccaa gtatcttctg gacggaaggg aatgcaccag cacgcatgtc tatacccttt     540
atcagcgtgg gcaacgcata cagtagcttc tatgatgggt ggtccaactt tacacagaat     600
ggagtttacg ggttcaacac gctaaacaac atgggaaagc tatacgtacg acacgtcaat     660
ggagctagcc ccggccctgt gaagagtacc atacggtttt acatgaagcc caaacacgtg     720
aaggcttgga tacccagacc tcctcgcctc tgcgagtacg aaaaatcagg caatgtaaac     780
ttcaaaccca agggcgtgac agagagccgg acgtctatca aattagaaaa accaaaccct     840
gcgtccaaat taatgaacca c                                               861
```

<210> 58
<211> 894
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E14, strain Tow

<400> 58
```
aatgatccag agcaagctat aaatcgggcg ctagcgaggg tggcagacac agttcgtagt      60
gggccgtcta actctgaaca aattcccgca ctgacagccg tggagacagg gcatacatca     120
caagtcgtcc ccagtgacac aatgcaaacc cggcatgtga agaattacca ctccaggtca     180
gagtcaacaa tagagaactt tttgtgtaga tcggcttgcg tgcacatcgc aacatacaag     240
gctaaaggcg gagctggaga cgtcgaccgg tacgacagct gggacataaa cataaaagag     300
ctggtacagt tgcgacgcaa gtgcgagatg tttacgtacc taaggtttga tatggaggtc     360
acctttgtga ttaccagcat acaggagcag ggcaaagcac tgacccagga catgccggtg     420
ctaacgcacc aaataatgta cgttccaccg ggcggtgccg tgcctagtgg tgcagaaagc     480
tttgcgtggc agtcatcaac gaatcccagt gtgttctgga cagaaggcaa tgcaccagca     540
cgtatgtcta tacctttat aagtattggg aacgcttaca gtaatttcta tgatgggtgg     600
tcccacttta cccagaacgg tggttacggg tacaacacac taaacaaact gggtaagatc     660
tacgtcaggc atgtgaacaa acaaacccc acggatgtca ccagcaccgt gcgaatttac     720
ttcaagccca aacacgtgcg agcttgggtg cctcgcccgc ctagactatg tccttataag     780
aacaaggcaa atgtaaactt tgaagttact agtgtaacca ctgccagaac gagtcttaat     840
gatgtcccca ctcccaacca cagtagtagc gtgcacctgc gcatgcacac gcac          894
```

<210> 59
<211> 882
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E15, strain CH96-51

<400> 59
```
ggtgatgacc aacacaagac caatacagtg acagacacag agcagagtgg cccgtcaaat      60
tccgaacgcg tcccagccct cacagcagtg gagactggcc acacttcgca ggtcgtaccc     120
agcgacacag tgcaaactcg ccacgtacgc aattaccact caaggacaga gtctacctta     180
gagaatttc ttggtaggtc agcatgtgtg cacatcgaca catacaaggc taagggtgaa     240
aaaggatctt ctgagaggta cgcgtcatgg gagataacta acaggagat ggtgcaattg     300
cgccgaaaat gtgagatgtt cacatatatg aggtatgacg tggaaataac atttgtgata     360
accagctacc aggagcaggg cacacgattg gcccaggaca tgcctgtact aacacaccaa     420
atcatgtacg tgccccgggg tgggcctgtg ccaacaagca cggagagcta tgcatggcag     480
```

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```
acctcaacga accctagcgt cttttggact gagggcaacg caccaccgcg tatttccata     540
cccttcatca gcataggaaa tgcgtactgc aactttatg atgggtggtc acatttctca      600
caagatgggt cctatggcta cacagcgctc aatagaatgg ggaaaatata tattagacat     660
gtaaataagg agaccccac acaggtcatt agtaccgtga ggatgtacat gaaaccaaaa      720
cacattcgcg catgggtgcc cagacccccc cggctgtgca aatacctaca ctcaggcaac     780
atgaacttca acgtggagga cattacagag gagcggaacg atataaacca tgtacccacc     840
cccagccaca gcagtagtgt gcgtgtgcgt cttggcacca ca                       882
```

```
<210> 60
<211> 867
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E17, strain CHHE-29

<400> 60
```
```
ggtgatgttg aggactcagt aaacagagca gtggttaggg tagcagacac catgccaagt      60
ggaccatcca attcgcaggc agtacctgcc ttgacagccg ctgagacagg tcacacgtct     120
caagtggtgc ctggtgataa catccaaaca cgtcatgtgc acaactacca ctccagaact     180
gaatccagta tcgaaaattt cttcgggcgt tccgcatgtg tagtggtcaa aacatataaa     240
atgggtcaaa aagttgtagc tacagacaga tatgatagtt ggatgatttc cattagggac     300
atggtacaac taagacgaaa gtgtgaaatg ttcacgtaca tgagatttga tttagagatc     360
accttcgtgg tcacgagtta ccaacaatat agtacatcct tgacacagga catgccagtg     420
atcacgcatc agttcatgta tgtgccgcct gggggtccgg ttcctgagag tgtaaatagc     480
tacgcttggc aaacgtcaac caatcccagt atattctgga ctgagggtaa tgccccagca     540
aggatgtcca ttcccttcat cagtgttggg aacgcatata gctgcttcta cgatggctgg     600
tcacacttca cacagaaggg ggtttatggt tataacactc tcaacaacat gggcaaattg     660
tacatgcgac acgtgaacaa aaatagcccc acagagatca taagcactct tcgtgtgtat     720
ttcaagccaa agcacgtgaa agcgtgggta cccagaccac ccaggctatg tccatacaaa     780
tataaggcaa atgttgactt tgaagtgact ccaatcacag acaagcgaga ctccataacc     840
agcataccag tccccaagca cactcat                                        867
```

```
<210> 61
<211> 861
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E18, strain Metcalf

<400> 61
```
```
ggggataacc aggatcggac ggtcgccaac acacagccta gcggtccgtc caactccacg      60
gaaattccag ccttaacagc ggtggaaacg gggcacacct cacaagtgga tcccagtgac     120
actatccaga ccaggcacgt ggtaaacttc cactcacgtt ctgagtccac tatagaaaat     180
ttcatggggc gtgcagcatg tgtgttcatg gatcagtata aaatcaatgg agaagagacg     240
tccactgata ggttcgcagt gtggaccata aacataaggg agatggccca attaagaagg     300
aagtgtgaaa tgttcacgta catgcgtttt gatatcgaga tgacaatggt cattaccagc     360
tgtcaagacc agggaacgat actagatcag gacatgcctg ttttgacgca tcaaattatg     420
tacgtcccac caggggggccc aatcccagcc aaagtagata gttacgagtg gcagacatca     480
acaaacccca gcgtcttctg gacggaaggt aatgcaccac cgcgtatgtc tattccattc     540
attagcgtcg gcaatgctta tagctcattt tacgatggtt ggtcacactt cacacaggac     600
ggtacctatg ggtatacaac ccttaatgca atggggaaac tgtacattag gcatgtgaat     660
aggagcagcc ctcatcagat aaccagcacg atcagagtat acttcaaacc caaacacatc     720
aaggcatggg tgccccgacc accacgattg tgcccgtata taaacaaaag ggacgtaaac     780
tttgtagtca cggagataac agactcaagg acttccatca ctgatacacc acacccagaa     840
catagtgtcc tggcaacgca t                                             861
```

```
<210> 62
```

●   ●

```
<211> 879
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E19, strain Burke

<400> 62
ggagacatcg tggaggctgt ggagggagcc atctcgcgag tggcagatac tgttagtagt         60
gggcccagta actctcaagc agtaccagcc ctcacagcag tcgaaacggg tcacacttct        120
caagtcaatc ctagtgacac catgcagacc agacacgtga caaattacca ctcgcggtca        180
gaatccagca tagaaaattt ccttagccgc tctgcttgtg tgtatatggg cgaatacagc        240
acacaagcat cagatgagac caaaaagtac atgtcatgga ccataagccc aaggaggatg        300
gttcaaatgc gcaggaagtt tgagctcttc acttacctgc gttttgatgt ggagattact        360
tttgtaatca ccagcagaca agtcaaggta gggacacaat taggccaaga tgcccccccg        420
ctaactcacc aagtcatgta tataccccca ggaggcccag tacctgattc agttggtgat        480
tacgcatggc agacttccac taaccctagt atcttttgga ccgaaggtaa tgcatcaccc        540
aggatgtcaa tacccttcat tagcataggt aacgcctata gcaactttta tgacgggtgg        600
tcgcattttc accagaatgg cgtctatgga tacaacacgc tgaaccatat ggggcaactg        660
tacgtgcggc atgttaacgg cccttcacca ttaccagtga caagcacagt cagggtctac        720
tttaaaccca aacacgtgaa ggcttgggta ccgagggcac ccaggctatg tcaatatgta        780
aatgcatcca ctgtgaactt cgagccaaca gacatcactg agtcacgcac tgacatcaac        840
catgttccag acaccgtgaa gccagatctc caaacatac                              879
```

```
<210> 63
<211> 843
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E20, strain JV-1

<400> 63
ggggacgtgc acgatgcggt ggttggggcc atgacccgtg ttgcagacac gataagtagt         60
gggccaagca attcagaaag cgtgccagca ttgactgcag ccgagacagg acacacatca        120
caggtagtac cgagtgatac catgcagacc agacatgtgc ggaatttcca cacaagatca        180
gagtcttcaa tagaaaattt catgagtcgc tccgcctgtg tctactatac taagtataag        240
accaaagacc cggacccaac ggagatgtac tctagttgga aggttaccac caggcaagtg        300
gcacaactca ggaggaagat ggagatgttc acttatttgc gctttgacgt agaagtgaca        360
tttgtaataa ctagctcgca agatcagtcc acgagtgttg cacaggacgc acctgttctc        420
actcaccaaa tcatgtacat cccacccgga ggcccggttc ccaaatcagg tagggattac        480
tcatggcaat cctgtactaa cccaagtgtt ttctggactg agggtaatgc accaccacgc        540
atgtgtattc cgttcattag tattggaggg gcatatagtt cattctatga cgggtggtcc        600
cactttaacc aacaaggtcc gtacgggtat aacactctca atgacatggg tcaactgtat        660
tttaggcatg tgaacgaggg tagcccaggg cggtaacaa gctacatcag aatatacttc        720
aaacctaaac atattagagc atgggtgccc agaccaccta gattgtgtca gtatgagaaa        780
caagggagcg ttgacttcaa ggtgcaggga gtaactgatg ctcgtacctc gctcaccact        840
aca                                                                      843
```

```
<210> 64
<211> 885
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E21, strain Farina
```

26

SUBSTITUTE SHEET (RULE 26)

```
    <400> 64
aatgacccag cacaagccgt gttgagtgcg atcggtcgtg tcgctgacac cgtcgctagc    60
gggccatcga attcagagag agttccagtt ctaaccgctg cggagacagg tcatacctca   120
caggtggttc ccagcgatac cattcagacg cgccacgtcg tcaacttcca cacaagatcg   180
gagtcaacaa ttgaaaattt tatgtgtcgc tccgcctgcg tgtacatcgc ccggtacggt   240
actgaaaagc aaggggaaca aatatccaga tacaccaagt ggaagatcac cactaggcag   300
gtggcgcaac tgcgcaggaa gatggagatg ttcacataca tgcgatttga tttggaaatg   360
acatttgtaa tcacaagctc ccagcgtatg tcaacggcat atgattcaga cacaccagcc   420
ctcacccacc aaataatgta cgtgccacct gggggcccgg agccccgtca ttatgaggat   480
ttcgcctggc agacatccac aaatccaagc atattttgga ccgaaggtaa cgcaccacca   540
cgcttatcaa tcccatttat gagtgtggga aatgcctatt gcaattttta tgatgggtgg   600
tctcactttt cacaaagtgg agtgtatggg tttaccacct aaataacat gggacaactg   660
ttcatgcgcc atgtcaataa gtcaacagcg cacccattg atagtgtggt gcgagtttat   720
tttaaaccaa agcatgttaa ggcgtgggtt ccaagacctc cccggttgtg cccatacatc   780
tatgcaagga acgtggattt tgagccacaa ggtgtcactg aatcaagaga aaagataaca   840
ctagatdggg atactcacac ccctatgcgc acatgcgggc cgttc                   885

       <210> 65
       <211> 882
       <212> DNA
       <213> Enterovirus

       <220>
       <221> misc_feature
       <222> (0)...(0)
       <223> E24, strain De Camp

       <400> 65
ggagatgtct gtgaggaagt agagagggct attgtcaggg ttgcagatac tgtcggacgc    60
ggtcctgcta acactgagag tgtaccagcg ctgactgcag ttgaaactgg acacacttca   120
caagttgtac ccggggacac catgcaaacc agacatgtta aaaactttca cacgcggtca   180
gaatcatctg tggaaaattt catgtgcaga gcagcgtgtg tgtattatgt ggattaccac   240
acacaaaatg acagtgagga tgaaaaatat gcatcttgga ttatcaacac gagacaggta   300
gcacagctac gcaggaaaat tgagctgttc acatacacta ggtttgatgt cgaaatcaca   360
ttcgtgatca ccaccacaca gcagcaatcc acagctccca accccgacac tcctctgctg   420
acacaccaaa tcatgtatgt gccccggggt ggcccagtgc caaatagtgc taccgattat   480
tgttggcaat catccacaaa tcccagtata ttctggaccg agggtagcgc accacccaaa   540
atgtcaatac cctttataag tgtgggaaat gcatacagca gtttttatga tgggtggtca   600
catttcactc aaaacggggt gtacgggttc aacactctga caaatatggg caaattatac   660
ttcaggcacg taaatgacaa caccgtaggg ccatatgtga gcaaagcccg catttatttc   720
aaaccaaagc atgtgcgtgc gtgggttccc aaacctccca ggctctgtga atacaacaat   780
cgagccaacg tgaactttga accacgaggg gttaccgatg ccaggtctag tatcacggcc   840
acaaccgaca cgatcactga gagcacaggg atgcaaacga ct                     882

       <210> 66
       <211> 876
       <212> DNA
       <213> Enterovirus

       <220>
       <221> misc_feature
       <222> (0)...(0)
       <223> E25, strain JV-4

       <400> 66
aatgatccag caactgccat agttagatcg gttgagagag tggctgatac catagcaagt    60
ggacccacta actcagagag agtgccagca ctaaccgccg ttgaaacagg tcacacctca   120
caggtagtcc cgagcgacac catgcaaact aggcatgttg tgaaccatca cattagatca   180
gagtcctcta ttgaaaactt cctgagcagg tccgcctgcg tgtacatcga catgtatggg   240
acaaaagaga atggtgacat caagcgcttc accaactgga gaataaacac acgtcaggtc   300
gtgcagctaa ggcgcaagct ggaaatgttt acatacatta gatttgatgt tgaaatcact   360
tttgtaatca ctagcacaca gggaacaccg actcaaaaga acaaggatac cccagttctt   420
acacaccaaa tcatgtatgt gccaccaggg ggcccaatcc ctgtatctta tgaagattat   480
```

SUBSTITUTE SHEET (RULE 26)

```
tcttggcaga cctctacaaa tcctagtgtt ttctggacag aagggaatgc cccagcccgt      540
atgtcaattc ccttcatgag cgtagggaac gcctattgta acttttacga cgggtggtca      600
cacttctcac aatcgggtgt gtatgggttc actacactca ataacatggg tcagttgtac      660
tttcgacacg tgaacaagga caccccttgga ccatacaata gcacggttcg ggtttacttc      720
aaacccaaac atgtgaaggc atgggtaccc agaccaccgc gcctgtgcga ctacgtttac      780
gcacataatg ttgacttcac accaaaaggg gttactgaca gcaggacaa gatcaccctg      840
gaccgtgatg aacacgtgcc gtcagtggtt aaccac                              876
```

        <210> 67
        <211> 870
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E26, strain Coronel

        <400> 67

```
ggagatgatc caccgcattc gatctcaaac acggttgcaa acaccaaccc tagtggtcca       60
accaactcag aaaggatccc agcgctcaca gcagcggaaa ctggtcacac ctcgcaggtg      120
gtcccgagtg ataccgtaca aactcgttgt gtgaaaaact tccacactcg atcggagtca      180
tcaattgaga acttttgtg cagatcagct tgcgcacaca tgtcatcgta tgaggccttc       240
ccaacaacaa cacaagacgg tacacaaagg ttcgccaatt ggacgattag tgtgaaagac      300
atggtgcagt tgaggaggaa atgtgagatg ttcacgtact taagatttga catggaggtg      360
acttttgtga taactagtgt gatcgaaact acaaaaggga aagtaccggc accagcagtc      420
acacaccaag taatgtacat tccaccaggc ggacctattc cagctagcgt tgaaagttat      480
gcctggcaaa catccaccaa cccaagcgtg ttttggacag aagggaatgc tcccccacgc      540
atgtctatac catttatcgg cattggtaat gcctacagca tgttctatga cggatgggcc      600
agtttcagac aatcgggtgg atatggatac agcaccctga accacatggg ccagatattc      660
gtaagacacg tgaatgcaac cataccaaac ttgatcagca cagtcaggat atatttcaag      720
cccaagcacg ttagggcttg gattcctaga ccgcccaggg tgtgtcagta catttacaag      780
gcaaatgtag actacgcagt gtcaaatatc actgaaaagc gagatagtat aagatggaca      840
ccaacaaccg gtccgtcaat gacatcccac                                     870
```

        <210> 68
        <211> 855
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E27, strain Bacon

        <400> 68

```
ggtgacgacg caaggactgt tagcgacaca caaaagagcc agccatctaa ctctgagcaa       60
gtgcctgcct taacagcggt tgagactgga cacacctctc aagttgagcc cagtgataca      120
gtacagacac gacatgttgt caactcacac agtaggacag agtcgacaat tgagaatttc      180
tttgggaggg ctgcgtgtgt gagggtgaga gagtactcta tagggcatga tttggcagcg      240
gacgaaacat atgatagctg ggccattaca gtgcgagaca tggtgcagct tcgtaggaag      300
tgtgagatgt tcacatacat gaggtttgac ttggaagtga cgctagtcat caccagctat      360
caagaaccag ggacaatcac cacccaggat atgcccgtcc taacccacca gattatgtat      420
gtgccgccag gaggcccggt cccagccaag gctgacagtt acgcgtggca aacgtcaaca      480
aatcccagta tattctggac cgaaggcaac gctccacctc ggatgtctat cccatacatt      540
ggcatcggca atgcatatag cagcttttat gacgggtggt cgagcttcaa caactcgggt      600
gtgtatggct acacaaccct gaataacatg ggtaaactgt acttcagaca cgtgaacaaa      660
cacagcccaa acactattaa gagcactgtg aggatatatt tcaagcccaa gcacgtccag      720
gcgtgggtcc caagaccacc gcgcttgtgc ccgtatctga ataagaggga tgtcaacttt      780
gaagtgcaac ccgttacgag caagagagac agtattaact gggtgccaca aacaaaccgc      840
caagtgtaca atcat                                                     855
```

        <210> 69

```
        <211> 876
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E29, strain JV-10

        <400> 69
aatgaaccta gtagtgccat tgagagagca attgtgcgcg tagcagatac tatggccagt      60
gggcctgcaa actcagagca aatccctgcc ctaaccgctg ctgagactgg tcacacctcg     120
caagtggttc ccagcgacac tatgcaaacc cgccatgtat gtaactacca caccagatct     180
gaatcatcga tcgagaactt cctatgcagg gctgcatgtg tctacatagt gagttacaaa     240
acacagggcg acgaacaaac cgacaaatac gctagttggg agatcaacac gcggcaggtg     300
gcacagttaa ggagaaaatt ggaattcttt acttacataa gatttgacat ggaggtaaca     360
tttgtgatca ctggttcaca agacaccagc acacagacta acacggatac.gccagtgcta     420
acccatcaaa ttatgtatgt gcctcccggt ggtccagtac cgacatcagc cacagattac     480
agctggcaga catctacaaa tcccagtgtg ttctggacag aagggaatgc gcctccccgt.     540
atgtccatac ccttcatgag cataggcaat gcgtatgcta atttctatga tgggtggtcg     600
cactttagcc agtcaggggt gtatggttac accacactca ataatatggg taccctgtat     660
ttcaggcacg tgaacaactc gaccatcggg ccttacacca gtgcagttag gatatatttc     720
aagccaaagc acgtcaaagc gtgggtgcca cgaccgccac ggttgtgcga ttacaaacac     780
aaaaagaacg tagactttac tcccacaggt gtgaccacaa ctagagacaa gataaccttg     840
gacaagggga ctcacgtgcc gagcgtatgg aacaca                               876
```

```
        <210> 70
        <211> 876
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E30, strain Bastianni

        <400> 70
aatgaccccg aaggtgcact taataaagca gtgggcaggg tagctgatac tatagctagt      60
gggcccgtca atacagagca aattcctgca ttgacagcag tggagacagg gcatacatct     120
caagtggtac ctagtgacac aatgcaaacc cgacacgtgg tcaacttcca tactagatca     180
gagtcatcgt tacagaactt catggggaga gcggcatgtg tatatatcgc ccactatgcc     240
acagaaaagg ctaatgatga tttggacaga tacactaact gggagatcac aactaggcag     300
gtggcacagt tgaggcgcaa gttggagatg tttacgtata tgagatttga cctcgagatt     360
acattcgtaa tcaccagctc ccagcgtact tccaacaggt atgcgtcaga ctccccccca     420
ttaacacatc aaataatgta cgtgccgccg ggggtccaa ttcccaaggg ttatgaagac     480
tttgcctggc agacgtccac caacccaagt gtgtttggga ccgaaggtaa cgcccctcct     540
aggatgtcaa taccattcat gagcgttggc aacgcatatt gtaacttta tgatggatgg     600
tcccatttca gtcagagcgg tgtgtacggg tacactacat tgaacaacat ggggcgctta     660
tattttagac atgtaaacaa atcaacagga tacccagtaa atagtgtcgc ccgcgtctat     720
ttcaagccca agcatgtgaa ggcatgggta cctcgcgcgc cacgcttatg tccatatttg     780
tatgctaaaa atgtcaactt tgatgtgcaa ggcgtgaccg agtcccgggg taagatcact     840
ctcgaccgtt cgactcacaa ccccgtgtta accact                               876
```

```
        <210> 71
        <211> 876
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E30, strain Frater
```

29

```
        <400> 71
aatgaccctg aaggtgcgct caacaaggcg gtgggcagag tggctgatac aatagccagt    60
gggccgtca acactgagca aattcccgca ttgacagcag tggaaacagg gcacacatct   120
caagtagtac ctagtgatac aatgcaaact cgacacgtgg tcaacttcca caccagatca   180
gaatcatcgt tggagaactt catgggaaga gcagcgtgtg tgtatatcgc tcattatgct   240
acagagaagg ctaatgatga tttagacaga tacaccaact gggaggtcac aaccaggcag   300
gtagcacagt tgaggcgtaa actggagatg ttcacgtaca tgaggtttga cctcgagatc   360
acatttgtaa tcaccagctc ccagcgcact tcaaccaagt atgcgtcaga ttcccccca   420
ctaacacacc agataatgta tgtaccgccg gggggcccga tccccaaggg ttatgaagat   480
tttgcctggc agacgtccac caacccaagt gtattttgga cggaaggtaa cgccccccct   540
aggatgtcga taccattcat gagcgttggt aacgcatact gcaactttta cgacggatgg   600
tcccatttca gccagagcgg tgtgtacggg tacactacat tgaacaacat ggggcacttg   660
tatttcagac atgtaaacaa atcaactgca tacccagtta acagtgttgc ccgcgtctac   720
ttcaagccca agcacgtaaa ggcttgggtg cctcgcgcgc acgcttatg tccatatttg    780
tatgcaaaaa atgtcaattt tgatgtacaa ggtgtgaccg agtctcgggg aaaaatcact   840
cttgatcgat cgactcacaa ccctgtgtca accacg                            876


        <210> 72
        <211> 877
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E30, strain Giles

        <400> 72
aacgaccccg aacatgcgtt aaacaacgcc attggtagag tggcagatac gatcgccagt    60
gggccggtga actcggaacg catacctgca ctaaccgcag tggagacagg acacacgtct   120
caagtggtgc caagcgacac catgcaaaca aggcacgtag tcaacatgca tacaagatcc   180
gaatccacca tcgaaaattt catgggaagg gctgcttgtg tatacattgc gcaatacgcc   240
actgataagg ccagtgatga tctggacagg tacaccagct gggagatcac tacgagacag   300
gttgcgcaat tgaggagaaa gctggagctg tttacataca tgaggtatga cttagaagtt   360
acctttgtca ttaccagttc ccagcgcact tcgactacat atgcatcaga ctccccgcca   420
ttgacccacc aaattatgta tgtgcctccc gggggcccta ttcccatagg acacgaagac   480
ttcgcctggc agacttcaac aaaccccagt gtcttttgga ctgaaggaaa tgccccacca   540
cgtatgtcca taccattcat gagtgtgggc aatgcctact gcaattttta cgatgggtgg   600
tcacatttta accagagtgg ggtgtatgga tacactacac taaacaacat gggtcgctta   660
tatttcaggc atgtaaacag atctactgcc tacccagtta atagtgttgc acgtgtttac   720
tttaaaccca aacacgtcaa agcctgggtc ccacgagcac acgattgtg cccatacttg    780
tatgctaaga acgtgaactt taatgtgcaa ggtgtgactg actcccgaga caagataacc   840
gtagaccgaa ccaaccatgt acgtatgcgc accacag                           877


        <210> 73
        <211> 876
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E30, strain PR-17

        <400> 73
aacgaccccg aacacgtgtt aaacaatgcc gttggcagag tggcagatac aatcgccagc    60
gggccggtga actcggaacg cgtacctgca ctaactgcag tggagacagg gcatacgtct   120
caagtggtgc caagcgatac tatgcaaaca agacacgtag tcaacatgca cacaagatct   180
gaatccacta tcgaaaattt catgggaagg gctgcttgtg tatacatcgc acaatacgct   240
actgacaaag ccagtgacga tttggatagg tacaccagct gggaaatcac cacgagacag   300
gttgcgcaat tgaggagaaa gttggaaatg ttcacataca tgaggtatga cctggaagtc   360
acctttgtta tcaccagttc ccagcgcacc tcgactacat atgcatcaga ttccccacca   420
ttgactcatc agatcatgta cgtgcctccc gggggcccca ttcctatagg atacgaggac   480
```

```
ttcgcctggc aaacatcgac taaccctagt gtcttttgga ctgaaggaaa tgccccacca     540
cgcatgtcca ttccatttat gagtgtgggc aatgcctact gcaattttta cgatgggtgg     600
tcacacttta gccagagtgg ggtgtacgga tacactacac taaataatat gggtcgtctg     660
tatttcaggc atgtaaacaa atctactgcg tacccggtta atagtgttgc acgtatttac     720
ttcaaaccca aacatgttaa agcctgggtc ccgcgagcac cacgactgtg cccatatttg     780
tatgcaagga acgtgaactt taatgtgcaa ggtgtgactg actcccgaga aaagataacc     840
atagaccgaa ccaaccatgt gcccatgcgt aacaca                               876
```

```
        <210> 74
        <211> 876
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E31, strain Caldwell

        <400> 74
ggggacacgg aacatgcagt tgagtcagct atctccaggg tagcagatac cattagctca      60
ggtcctagta acactgttgc tataccagcg ctcaccgcgg cagaaacggg ccacacatcg     120
caagtcaccc ccagcgacaa tcttcagacg cgccatgtta agaactatca ctcccgctct     180
gagtcaacta ttgaaaactt cctgtgtaaa tccgcgtgtg tgcatattgc gtcatacaac     240
gcatacggtg atgttggatc agacagtaga tatgatagtt gggagatcaa catcagggaa     300
atggtgcagt taaggaggaa gtgcgaaatg ttcacctatc tcagatttga catggaggtg     360
acatttgtca tcactagcaa gcaagatcaa gggacttcgc tatcacaaga catgccagtg     420
ctaacacatc agatcatgta cgtgccgcca ggcggatccg tgcccactag cgtccagagc     480
tacgcatggc aaacatccac caacccgagc gtgttttgga cagagggcaa tgcccctgct     540
agaatgtcca tcccattcat tagcataggg aatgcataca gcagcttcta cgacgggtgg     600
tcacatttca cccaacaagg tggctatggc tataatacac tgaacaagat gggtaagttg     660
tttgtaaggc atgtgaataa agaaacacca acccatgtga cgagcacgat acgtgtatat     720
tttaaaccaa agcatgttag agcgtgggtg ccaaggccac ctagattgtg cccgtacatc     780
aataaagcgg actgtaactt cgctgttaca ccactcacca aacagcggtt aggaatcaac     840
gatgtcccgc ggcccagcca cacattacat actcat                               876
```

```
        <210> 75
        <211> 875
        <212> DNA
        <213> Enterovirus

        <220>
        <221> misc_feature
        <222> (0)...(0)
        <223> E32, strain PR-10

        <400> 75
aacgaccccg caaccgctat tgaaggagca gtccggcgag tggcggacac gatccagagc      60
ggaccgagca attcggagcg ggttccagcg ttaacggccg ttgagacagg tcacacagca     120
caggttaccc cgagtgatac aatgcaaact agacatgtac acaacttcca caccagatcg     180
gagtctagca tcgagaactt cctcagtaga gcagcttgtg tgtacatagg gaaatatagt     240
agcaatgcaa caacacaaga tgaacaatac atgtcatgga caattaatac cagacagatg     300
gtgcagctga gacgcaaatt cgaaatgttc acctacctac gcttcgacgt agaagtcact     360
tttataataa catcgcacca agatcaaggg acacagttca accaggatgc gcccgtaatg     420
tgccaccaaa tcatgtatgt gccacctggt ggcccggtgc ctaagagtgt tgatgacttc     480
acatggcaaa cctctactaa ccctagtgtc ttttggtcag aaggcaatgc accaccgaga     540
atgaccattc cattcattag tataggggac gcctacagca gctttatga tggctggtca      600
cacttctctc aaaatggggt ttacgggttt aatgcactca ataacatggg taaactgtat     660
gtgagacaag tgaacctaaa agcccctatg ccagtcagca gtacagttag gatctatttc     720
aaacccaagc atatcaaagc ttgggtaccc agaccaccgc gtctatgtaa gtacctgaag     780
tctgggagtg tcaattttga gcccactgat ttgacagaaa aacggaaatc cagaaagtac     840
atcccaaaaa ctttcagacc agatgtgaga accat                                875
```

```
        <210> 76
```

31

```
<211> 843
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E33, strain Toluca-3

<400> 76
ggtgatgtgc atgatgcagt tgtgggtgcg atgtcgcgcg tcgctgatac agtagcaagt      60
ggccctgcaa actctgagag cgtgcctgct ctcactgcgg tagaaactgg acacacgtca     120
caggtgacac caagtgatac aatgcagacc agacacgtac acaacttcca cacacggtcc     180
gaatcgtcaa tcgagaactt cttaagccgc tctgcatgtg tctattatgc aacgtacaaa     240
acaacagcca gcagacccga agaccaattc gttaggtggt ccatttcata ccgccaggtg     300
gcccaactgc gcaggaaaat ggaaatgttc acctacctgc gctacgatgt ggaggtcact     360
tttgtgatta caagttctca ggacccatcg accaacgtaa gccaggatgc tcctgtactc     420
acacatcagt taatgtacgt accccccggg ggtccagtgc ccaaaaattc aagagactat     480
gcatggcaaa catccaccaa cccgagtgtg ttctggaccg aggggaacgc accaccaagg     540
atatccatcc cctttatcag tgtgggcaac gcatacagtt gcttttatga tggatggtcc     600
cactactcac agacggggggt gtatggttac aacacccttaa acgacatggg ccaattattt     660
gtcaggcacg tgaatgaggc aagcccgggt gcggtgtcaa gtgtagttag gatttacttc     720
aaacccaaac atgtgaaggc atgggtcccg agaccaccac ggttgtgcca atatgttaac     780
gcagcaacgg tgaacttcac tcctgaaggg gtcactaagg cacgtactga tctcatgaca     840
aca                                                                   843

<210> 77
<211> 915
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> E34, strain DN-19

<400> 77
ggaatagaag aaactattga cacagtgatc accaacgctt tacaactgtc tcagcccaaa      60
ccgcagaaac aactcactgc tcaatccacc gcctcatcca gcggagtcaa ttcacaagaa     120
gtgccagcat tgactgctgt ggagacggga gcttctggtc aagccatacc cagcgacgtg     180
attgagacca gacatgtcgt caattacaaa actagatctg aatcaaccct tgagtcattc     240
tttggtagat cagcatgcgt aaccatactg gaagtagaga acttcaatgc cactaccgaa     300
tcggacaaga aaaagcaatt caccacctgg ccaatcacat acaccaacac agtccagttg     360
cgcaggaaat tggaattctt tacatactcc agatttgatc tggaaatgac ttttgtcata     420
actgagaggt accacacaag taatacagga catgctagaa atcaagtgta ccaaataatg     480
tacataccac cgggtgcgcc aaggcccaca gcacgggatg attacacctg gcaaagttca     540
tccaatccat cagtgtttta cacatatggt agcgcgcctc ccagaatgtc tatcccatat     600
gttggcattg ccaatgcata ctcacacttt tatgacgggt ttgcccgagt tcccctgaaa     660
gatgatacaa ctgactccgg tgacactttt tatggattgg tcaccatcaa tgactttgga     720
acattggctg tgagggtggt gaatgagttc aaccctgcaa ggataacatc aaaggtcaga     780
gtttatatga agcccaaaca tgtgaggtgt tggtgtccta ggccaccgcg cgcagtgccc     840
tatcgtggtg aaggggttga tttcaaacaa gattcaatca cgccaataac agcagtcacc     900
aatattaata ccttc                                                      915

<210> 78
<211> 936
<212> DNA
<213> Enterovirus

<220>
<221> misc_feature
<222> (0)...(0)
<223> EV68, strain Fermon
```

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SUBSTITUTE SHEET (RULE 26)

```
       <400> 78
tcaaaccact tacatggagc agaggcagcc tatcaggtgg agagtatcat caaaacagca        60
actgatactg tgaagagtga gattaacgcc gaacttggtg tggtccctag tctaaatgca       120
gttgaaactg gtgcaacttc caacactgaa ccagaagaag ccatacaaac tcgcacagta       180
ataaatcagc atggtgtgtc ggagacgtta gtggagaatt ttcttggtag ggcagcccta       240
gtgtcaaaga aaagttttga atacaagaat catgcctcat ccagcgcagg gacacacaaa       300
aactttttta aatggacaat taatactaag tcttttgtcc agttaagaag aaagctggaa       360
ttattcacat accttaggtt tgatgctgaa atcaccatac tcacaactgt ggcagtaaat       420
ggtaataatg acagcacata catgggtctc cctgacttga cactccaagc aatgtttgta       480
ccaactggtg ctcttactcc aaaggagcag gattcatttc attggcaatc aggcagtaat       540
gctagtgtgt tcttttaaaat ttctgatccc ccagctagaa tgactatacc ttttatgtgc       600
atcaactcag catattcagt tttttatgat ggctttgctg gatttgagaa aaatggtcta       660
tatggaataa acccagctga cactattggc aacttgtgtg tcagaatagt gaatgaacat       720
caaccagttg gttttacagt gaccgttagg gtttacatga agcctaaaca tataaaagca       780
tgggctccac gaccaccgcg aaccatgcca tacatgagca ttgctaatgc aaattacaaa       840
ggtagagata cagcaccaaa cacacttaat gccataattg gtaatagagc gagtgtcaca       900
actatgcctc acaacatagt aaccaccggt ccgggt                                 936


          <210> 79
          <211> 861
          <212> DNA
          <213> Enterovirus


          <220>
          <221> misc_feature
          <222> (0)...(0)
          <223> EV69, strain Toluca-1


          <400> 79
aatgaccagc acaatggggc gatcgttgcc aacacaacag ctagcggacc ttctaattcg        60
gaaagcatac cggcacttac tgcggctgag actggccaca catcgcaggt tgtccctagc       120
gacaccatcc agacaagaca tgtgaaaaac taccactcgc gttcagagtc caccatagag       180
aacttcctgt gtagatctgc ctgtgtgtac tacaccacgt acaacactca gggcgagcaa       240
gcacatgata aatacgcaag ttggccaatc acgactagaa aagttgccca actgcgcagg       300
aagctggagt tctttaccta cctgcggttt gatctcgaga tcacgttcgt gatcacgagc       360
gcccagatca catccacgaa ccaaaaccag gatgcccag tactcacaca tcaggtgatg       420
tatgtacccc caggggggggt ggtaccgcgc agtgtggatg actatagttg gcagacttcc       480
accaatccca gcatcttctg gacagaaggg aacgcacctc ctcgtatgtc aataccattc       540
attagtgtgg gcaacgccta cagcagcttt tacgacgggt ggtcacactt tgaacaaacc       600
ggggtatatg gattcaatac ccttaataat atggggactt tgtacgccag gcacgttaac       660
ggtgctagtc ccgggccagt caagagcacc attaggatat atatgaaacc taaacatgtg       720
aaagcgtgga tacctaggcc cccacggttg tgcgactatg tgaaatctgg caacgtcaac       780
tttgaaccaa aaggagtcac cgagagcaga ccatctataa agttagaaaa gacctcaagt       840
gggcacaggc tgacaaccca c                                                 861


          <210> 80
          <211> 7
          <212> PRT
          <213> Enterovirus


          <400> 80
Met Tyr Val Pro Pro Gly Gly
 1               5


          <210> 81
          <211> 7
          <212> PRT
          <213> Enterovirus


          <220>
          <223> Xaa(Position 3) = Val or Ile


          <223> Xaa(Position 5) =  Pro or Thr
```

33

```
        <400> 81
Met Tyr Xaa Pro Xaa Gly Ala
 1                       5


        <210> 82
        <211> 7
        <212> PRT
        <213> Enterovirus

        <220>
        <223> Xaa(Position 3) = Gln or His

        <400> 82
Phe Gly Xaa Gln Ser Gly Ala
 1                   5


        <210> 83
        <211> 7
        <212> PRT
        <213> Enterovirus

        <220>
        <223> Xaa (Position 3) = Ala or Val

        <400> 83
Thr Ala Xaa Glu Thr Gly His
 1                   5


        <210> 84
        <211> 7
        <212> PRT
        <213> Enterovirus

        <220>
        <223> Xaa (Position 7) = Ala or Val

        <400> 84
Thr Ala Val Glu Thr Gly Xaa
 1                   5


        <210> 85
        <211> 7
        <212> PRT
        <213> Enterovirus

        <400> 85
Gln Ala Ala Glu Thr Gly Ala
 1                   5


        <210> 86
        <211> 7
        <212> PRT
        <213> Enterovirus

        <220>
        <223> Xaa (Position 2) = Phe or Tyr

        <223> Xaa (Position 3) = Ile or Val

        <223> Xaa (Position 7) = Ala or Gly

        <400> 86
Met Xaa Xaa Pro Pro Gly Xaa
```

34

1   5

35